1859 PUBLISHED WEEKLY 1918

CHEMICAL LIBRARY

AMERICAN GAS ENGINEERING JOURNAL

JAN 21 1918
UNIV.

FORMERLY

AMERICAN GAS LIGHT JOURNAL

VOL. CVIII., No. 3
WHOLE No. 3124

NEW YORK, SATURDAY, JANUARY 19, 1918

Subscription $3 per year
$4 Canada $5 Foreign

"Preparedness Through Advertising"

The above is the title of an article by Mr. George Frank Lord, director of Publicity of E. I. du Pont de Nemours & Company, Wilmington, Del., appearing in a recent issue of *Printers' Ink.*

Mr. Lord asks our manufacturers a few very pertinent questions. He says:

"What will happen to our sales possibilities when peace comes?

"How will we earn dividends on the capitalization war requirements made necessary?

"How can we fill the war plants with peace products and give peace employment to the thousands of skilled workers living in the war built cities?"

He answers these questions by stating that the du Pont Company is doubling their advertising for 1918—not merely for current results, but for the development of future markets.

This is excellent advice to every manufacturer of gas making apparatus, industrial fuel, lighting and heating appliances.

The American Gas Engineering Journal covers every branch of the gas industry, by articles from the pens of the most prominent men in the field.

We are at your service.

American Gas Light Journal, Inc.

Publishers

INDEX TO CONTENTS, PAGE 60 ADVERTISERS' INDEX, PAGE 20

KOPPERS

BY-PRODUCT
COKE AND GAS OVENS

The most efficient method of carbonizing coal is in KOPPERS OVENS and the best coke and by-products are produced by this process.

H. KOPPERS COMPANY
Pittsburgh, Pa.

Builders of

By-Product Coke and Gas Plants
Tar Distilling Plants
Ammonia Recovery Plants
Benzol Recovery Plants

AMERICAN
GAS ENGINEERING JOURNAL

FORMERLY THE AMERICAN GAS LIGHT JOURNAL

Vol. CVIII, No. 3 NEW YORK, JANUARY 19, 1918 Whole No. 3124

Indications Are that Consumption of Motor Fuel Within Next Decade Will be Double Present Total of Gasoline Production

Tendencies Point to Possibility of Gas Companies Becoming Producers of Fuel for Such Purposes to Very Important Extent — Need of Keeping the Prospect in Mind and Preparing to Meet It

By J. E. BULLARD

Theodore Roosevelt has said that nine-tenths of wisdom is being wise in time. In these strenuous days of war there is a strong tendency to forget this and to think only of the present. It is wrong, however, to overlook the fact that the life and the industry of the United States will go on after peace has been declared, and that many things will be different, and that in order to make the country efficient plans should be made now to meet the changed conditions.

One of the fields which promises to show the greatest change is that of manufacturing, selling and providing fuel for automotive machinery. There has been and there still is agitation to reduce the supply of gasoline for private use. Such agitation for the most part has started from people who read the newspapers, but who have studied their geographies and scientific text books so many years ago that they have apparently forgotten that the fuel supply conditions here and in England are radically different. This agitation, nevertheless, has had a strong tendency to attract the attention of everyone to the present, and to cause them to overlook the future.

Temporary Reduction in Passenger Car Output

As a matter of fact, it is quite possible that there will not be considerably more gasoline used in this country, and the total production for domestic use and for export may not be greater, as would have been the case if there had been no war. Before the war the increased production of automobiles had become enormous. The industry had grown to such an extent and the automobile had become so popular that now there is in the United States an average of one automobile for every six families. Prices had been reduced to a very low point, there was the keenest competition between manufacturers and there was promise of still greater sales in the future. The war, however, has changed this. The cost of raw material and the difficulty of securing it at any price has not only forced the manufacturers to increase their prices, but has also prevented their increasing their output to the extent that it would have been increased had there been no war. This temporary retarding of the growth of the automobile industry has without doubt resulted in somewhat offsetting the increase in gasoline demands of the army and navy and for exportation caused by the war.

Need for 7,000,000 Trucks

The net result of the war on the aeroplane and the automobile industries, however, promises to be very far from detrimental. Up to date the development of the automobile industry has been almost entirely along the line of passenger cars. It is true that there are some half million of trucks now in use in the United States, but as yet they have not begun to displace horses. In many cases, if not in most cases, the trucks are doing work that horses could not do, and which would have to be done by railroad trains or electric cars if it was not done by trucks. One who doubts that this is the case should take a walk along the docks of any of our large coast cities or visit the freight terminals in any of our large inland cities and compare the scene there with that presented by the busy part of the principal shopping street.

To-day there is need in the United States, and urgent need, of more than 7,000,000 trucks. Were these in use the freight congestion would not be nearly as great as it is now and the cost of food would be proportionately less. The tests that the United States Army is giving trucks and the endorsement that it is giving to the use of trucks is bound to prove a great sales help. The result is sure to be that within the next ten years there will be wonderful developments in the truck busi-

ness, and that for many purposes they will completely displace the horse.

Before the war the aeroplane was in an experimental stage, with the public at large very skeptical in regard to its practical value. The wonderful results that have been accomplished so far during the war have changed all this. Not only has the aeroplane proven its practicability during the course of the war, but already the general public is looking to it to win the war. During the last three years the art and science of aviation has advanced very much faster than would have been the case during peace time. There are probably more than 25,000 machines already in use in Europe, and each of these machines is daily showing performances that would have been impossible of accomplishment four years ago. In addition, thousands of young men are being taught to drive them, and these men will be very much interested in aviation after peace is declared.

Aeroplanes Require More Fuel Than Automobiles

In the field of aviation the net result of the war is going to be a much wider use of aeroplanes than would have been the case under normal conditions. During the next ten years we can expect a phenomenal growth in this industry. Aeroplanes, however, require more fuel than do automobiles. This means that the fuel resources will be strained much more after the war is over than they are now being strained.

Already the extraction of gasoline from natural gas has reached very considerable proportions, and the cracking process has made it possible to obtain a great deal more gasoline from every barrel of crude oil than was formerly the case. There is a limit, however, to the amount of gasoline that can be extracted from natural gas, and the cracking process cannot be carried on further enough to assure an unlimited supply of gasoline.

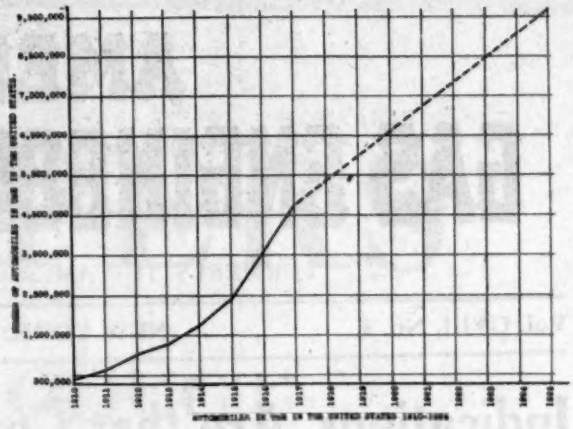
Looking to Bituminous Coal for Motor Fuel

The next logical place to look for automotive fuel is to the soft coal we are now mining. In the bituminous coal that is now being mined annually there is in the neighborhood of a million gallons of benzol that could be extracted for engine fuel, to say nothing of the millions of cubic feet of gas which, as experience in England has already demonstrated, can also be used for motor fuel.

After the war automotive developments are bound to bring the attention of engineers and chemists to this vast fuel resource. It will depend to a very great extent upon its state of preparedness whether the gas industry will be able to reap the benefit of the demand which will be created, or whether the profit will go to coke or chemical companies.

It would seem logical to expect that the gas companies are in the best position to render the service that will be required. These companies, however, will need to come to the realization of the wonderful market that is bound to be opened up, and follow up this realization with thorough preparation if they are to reap the full benefit of the demand that sooner or later will be placed upon them.

The accompanying curves serve to show the trend of affairs in the automotive field. In 1910 there were only about 400,000 automobiles in use in the United States.



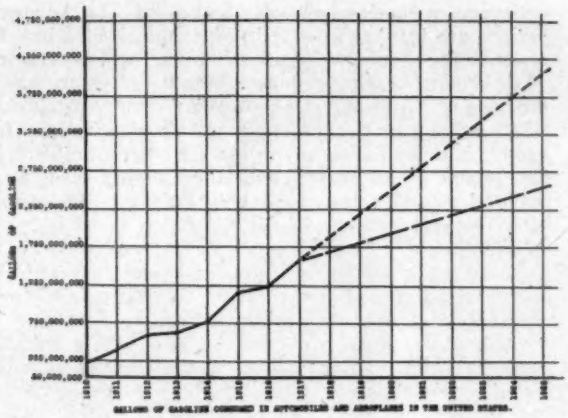
By the present time it is possible that the number in use reaches in magnitude to 4,500,000. The vast majority of these machines are passenger cars. The future development will be to a very considerable extent along the line of trucks. Since there is already a market for more than 7,000,000 of these, there is every reason to believe that by 1925 there will be in use in the United States alone more than 9,500,000 automobiles in addition to several hundred thousand aeroplanes.

Increasing Fuel Efficiency of Motors

The gasoline curve shows that the increase in the consumption of gasoline has not been as great as the increase in the number of cars used. This has been due to a very great extent to the increased efficiencies of cars. They have become lighter in weight and the number of miles possible from a gallon of gasoline has steadily increased. The gasoline consumption of automobiles, therefore, will probably not increase in the future at quite as great a rate as the number in use, though the actual consumption will depend to a considerable extent upon the ratio between the number of passenger cars and trucks in use. The gasoline curve, for the sake of being conservative, has not been drawn as steep for the years 1917-1925 as has the automobile curve. The lower broken line on the gasoline chart shows what, according to the most conservative estimates, the probable gasoline consumption of automobiles will be for the next twelve years. To this has been added the probable consumption of the aeroplanes, which gives the upper broken line or the total consumption that may be expected in the United States of fuel for automobiles and aeroplanes. The total does not by any means give the total consumption of gasoline in the country, because motor boats, stationary engines and all other uses have been left out. It will be seen, however, by reference to the curve that by 1925 we may expect a fuel demand from automobiles and aeroplanes alone of not less than 4,000,000,000 gal., or about twice the total gasoline production at the present time. This means that the total production of gasoline twelve years from now will have to be several times the present production, unless substitutes are found for many of the uses to which gasoline is now put.

Doubtful if Oil Wells Can Meet the Demand

It is extremely doubtful that our oil wells will be able



to supply the demand, and the next step will naturally be the distillation of coal. The combination of our petroleum and coal resources should give an adequate supply of automotive fuel for many decades to come, and not until then will it be necessary to seriously consider alcohol, although there is always a possibility that fewer obstacles will be encountered in the development of alcohol production than in the production of benzol and compressed gas. In the final analysis it would seem that very much depends upon the attitude that gas companies take towards the problem.

The logical course for gas companies to take at the present time would seem to be to increase the production of benzol to the limit and at the same time increase the sale of gas for industrial purposes in order that the coal supply can be conserved, the distillation of coal be still further increased and a greater supply of benzol be available. Up to the end of the war there is every reason to believe that the major portion of all the benzol produced will be needed in munition plants. This fact, however, should not blind gas companies to the fact that as soon as the war is over there will be a sudden and a very decided drop in the demand for this by-product for that purpose. To be wise in time, therefore, it will be necessary to begin now to develop a market for the surplus and to map out campaigns for selling the total production, if necessary, for automobile fuel.

This need not be difficult. There is already a greater demand for it than has ever existed for coke. All that is necessary is to refine it to a state of sufficient purity and mix it with enough gasoline so that it can be used in any car without the necessity of even readjusting the carburetor. The sale of benzol will have this advantage over the sale of coke. It will be possible to sell much of it at retail without the necessity of delivering it. Many people will like it so well that they will be glad to drive a few miles out of their way in order to get their gasoline tanks filled with it.

Here is a wonderful field, open and beckoning, to the gas industry. If it is cultivated at once there are tremendous possibilities in it for gas companies. If it is not developed right away some other industry is bound to reap the benefits. The automotive industries are growing, and growing rapidly, and they cannot wait for any other industry to get ready to prepare to sell a product that is needed. They will patronize those industries that are already prepared, and the industries that have been wise in time will reap their rewards.

"To Burn Gas is to Economize Coal," the Slogan in France

Improvement in Coal Supply Situation Makes Possible the Restarting of 111 Gas Works—Few Consumers Exceed Quantities of Gas Allotted to Them

By FRANCIS MILTOUN

The former Minister of Ravitaillement of France had occasion to announce in the Chamber of Deputies a few months ago, just before the long days of late autumn set in, that he had succeeded in opening up 111 gas works which had been closed down previously because of a lack of raw material. From some source or other he found, and arranged to have distributed, 20,000 tons of gas coal monthly. This was by no means a minor effort, and so far as we are informed it is still going on.

A Paris municipal councillor has again suggested that the public burn gas where it can and leave the coal supplies for those who have not gas, and they are many. Things seem to have improved generally in the matter of coal supply, and we have the word of the Minister of the National Government for it that France's own coal production will this year have increased to 30,000,000 tons, as compared with 21,250,000 in 1916 and 20,000,000 in 1915. An interesting side note is that in the mines of Bruay in the north, which largely provision Paris, there are 1,500 German prisoners working in a region sufficiently far from the lines of fire as not to be under the ban of the Hague Convention.

The Paris *Journal* recently published an admonition to the public to burn gas where it could with the following conclusions, which, however, the American reader must analyze and apply for comparison to his own local conditions:

"To burn gas will be to economize our coal production. A thousand kilos of coal distilled in a gas retort equals more than 1,200 kilos burned in a domestic stove, besides which it has produced 500 kilos of coke, 7.1 kilos of benzol, 9 kilos of sulphate of ammoniaque, 10 kilos of heavy oils or carbure, 1 kilo of phenol."

This found an echo in the words of Monsieur Louis Dausset, of the City Council, who in a short phrase seems to have reached the people in a most forceful manner in that the gas companies are evidently prepared to give to their limit so long as supplies hold out according to the encouraging statistics of coal production before quoted.

"To burn gas is to economize coal."

This is the slogan of the authorities, the gas producer and the public alike this winter in Paris.

It is well to recall that of the total coal consumption of France of the year before the war, of which one-third was imported from England, Belgium and perhaps Germany, in all some 62,000,000 tons, 15,000,000 went for industrial purposes, 11,000,000 for the railways, 10,000,000 for gas and other forms of lighting, 11,000,000 for domestic consumption and the remainder for various minor uses.

On the basis of the restrictions which were imposed in Paris last year, it has just been publicly stated by the prefecture of police that out of 830,000 subscribers but 5,000 exceeded the legal consumption authorized, of which but a bare 150 were in any sense exaggerated.

How Soon Will Heat Insulating Material Pay for Itself?

(Copyright, 1917, by W. F. Schaphorst.)

This is a problem that should certainly interest the owner, superintendent, engineer and everybody else connected with the economic problems that must daily be met in and about the plant. At first blush it may seem like a rather indeterminate problem to solve, but elaborate tests have been made on the subject of heat transmission through bare pipes and on those tests the writer has built a formula giving the cost of the heat loss in any number of hours. Reversing the formula to a more understandable word-of-mouth rule, it is made possible to compute the number of hours required for a given heat insulating material to pay for itself. This is the rule:

Multiply the cost of the pipe covering per lineal foot in dollars by the number of B.t.u.'s in each pound of coal, then by the efficiency of the boiler and then by the figure 2,000. We will call this amount "A."

Now find the temperature difference between the room and the hot metal of the pipe. That is, subtract the average room temperature from the hot pipe temperature in degrees Fahrenheit. We will call this the "temperature difference." Multiply this "temperature difference" by 0.0056 and to the product add 1.6. Then multiply the sum by the area of the metallic surface in square feet, then by the cost of coal per ton of 2,000 pounds in dollars, then by the efficiency of the covering, then by the "temperature difference," and lastly divide this amount into amount "A" found above. The result is the number of hours required for the covering to pay for itself.

It is quite possible that this rule will give rather surprising results in a good many cases. The opinion of some engineers is that a covering will pay for itself in a very short time. They overestimate the value of pipe covering and coverings in general, because the value of coverings is a subject that has been harped on for a great many years. Other engineers have a tendency to sneer at coverings, claiming that prices are so high that they never pay for themselves. However, let us take an example, and by means of this rule see for ourselves. Let us take a case where the cost of pipe covering per lineal foot is $2; there are 12,000 B.t.u. in each pound of coal; the boiler efficiency is 70 per cent. Multiplying one by the other, and then by 2,000 as per above rule, we get for the quantity "A":

$$2 \times 12{,}000 \times 0.70 \times 2{,}000 = 33{,}600{,}000$$

The "temperature difference" in this case is 200 deg. Fahr.; the area of the metallic surface is 3.1416 sq. ft., which is equivalent to the area of a pipe 1 ft. in diameter and 1 ft. long; the cost of coal per ton of 2,000 pounds is $4, and the efficiency of the covering is 90 per cent.

Applying the rule we get $200 \times 0.0056 = 1.12$.

Adding 1.6 to this we get 2.72.

Then multiplying by 3.1416, 4, 0.90 and 200, respectively, we get 6,150.

This is the figure that is to be divided into amount "A," or 33,600,000.

So, dividing 33,600,000 by 6,150 we find that the covering will pay for itself in 5,480 hours, which is equivalent to about 228 days, assuming that the pipe is under steam continuously, day and night. If the steam periods are intermittent, as is often the case in heating systems, the number of days, of course, will be greater. Thus in some heating systems where the pipes are under pressure for approximately 100 days per year, it will take a trifle over two years for the covering to pay for itself. But insulating materials are very durable. In fact, there is no reason why they should ever wear out under proper care, especially indoors. Therefore, after one or two years of use the steam saved is "pure profit."

This rule is applicable to flat or round surfaces. A good way in which to use the rule, therefore, is to compute the cost of the covering per square foot, and in the rule insert "1 sq. ft." for the area of the metallic surface. The relative values of the various sizes of covering will thus easily be solved. Small pipe coverings usually cost more per square foot of surface covered, and therefore it will take longer for the covering to pay for itself. This leads to the conclusion that large pipes certainly should be insulated against heat loss if they are constantly under steam.

The reader will readily understand that a rule of this kind cannot apply equally well indoors and out of doors. The temperature difference is generally much greater out of doors, and the radiating effect is also greater on account of the more serious nature of the air currents. A wintry blast against a hot steam pipe is notorious as a money waster. The writer, therefore, wishes to impress upon the minds of readers that in applying this formula to out-of-doors conditions it can be correctly assumed that the coverings will pay for themselves much more quickly than the result will indicate. The greater the temperature difference and the more serious the nature of the air currents the more necessary the insulation.

The rule also shows that a high boiler efficiency will increase the time necessary for a covering to pay for itself, whereas a high efficiency of the covering will decrease the time. It furthermore shows, of course, that a good inexpensive covering is most desirable. It is probably true, in extreme cases, that covering doesn't pay, but by applying this rule carefully it is the belief of the writer that such cases will seldom be found.

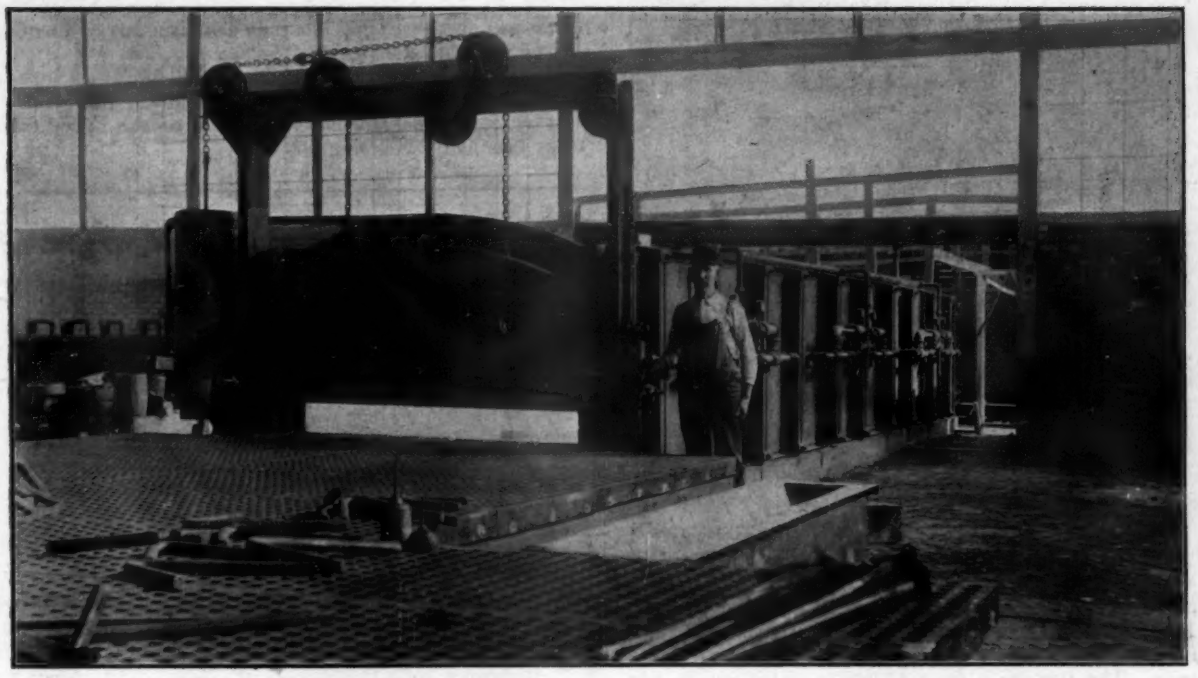
W. F. SCHAPHORST.

Utilities Have Shown Steadier Average of Earnings than Railroads or Industrial Companies

Public utilities as a class have shown steadier average of earnings over a term of years than have the railroads or industrial companies, states Hambleton & Company, bankers, of New York City, in a recent report.

In times of depression as well as in years of prosperity their earnings maintain the normal level. This is readily understood, for we can eliminate many things when times are bad, but we must all light our houses, cook our meals and ride on street cars, and the company which furnishes these necessities is the gainer.

Diversification of territory and service undoubtedly makes for strength, and a public utility company which serves a large number of communities can hardly be expected to show any material decrease in earnings, depression in one district being balanced by normal or improved conditions in others.



FURNACE IS 36 FT. LONG BY 6½ FT. WIDE BY 2 FT. 10 IN. HIGH AT CENTER OF ARCH

Gas-Fired Shipyard Furnace Burning Over 3,000 Cu. Ft. Per Hour Betters Oil-Firing Cost with Oil at 6 Cents Per Gallon

Used for Bending Structural Shapes and Plates — Handles 5 Tons Per Day — But One Set of Burners Used for Short Work

By WILLIAM J. HARRIS, JR.

Engineering Department, Surface Combustion Company, Long Island City, N. Y.

The use of city gas in shipyards has in the past apparently been confined to such minor operations as toolroom furnaces, soldering iron heaters, etc. In fact, many yards have not seen fit to have any gas service whatever. The larger furnaces for forging, and for bending operations on the various structural shapes and plates used in constructing the ships, have used either coal or oil fuel. The only exception known to the writer is a "plate and angle" furnace using city gas at a yard on the Pacific Coast.

Has Proved Successful

The usual high relative cost of city gas compared with oil on a B.t.u. basis is no doubt the reason why the former fuel has not been used. With modern burner equipment and furnace design, the efficiency of gas is increased to such an extent that this fuel cost difference is overcome. There also seems to have been a feeling among furnace users that gas simply would not do the work.

The gas-fired "plate and angle" furnace illustrated herewith has proved very successful in every way. The even heating of the work, ease of temperature control, lack of scale formation, comfort of workmen due to absence of smoke and oil fumes have been particularly satisfactory. Figs. 1 and 2 are general views of the furnace and bending table. The inside dimensions are 36 ft. long by 6½ ft. wide by 2 ft. 10 in. high at center of arch. Attention is called to the substantial steel casing and heavy door which is provided with a compressed air lifting mechanism.

The high-pressure gas system is used with a motor-driven rotary compressor operating at approximately 10 lb. per square inch. This gives a one-pipe distribution with automatic proportioning of gas and atmospheric air at the furnace, and temperature control by adjustment of the gas valve only.

The operating temperature is 1,800 to 2,000 deg. Fahr., depending on the kind of work being done. Higher temperatures are necessary for light work in order that the bending operation may be completed before the steel cools. Heavy pieces hold the heat longer, and hence do not have to be quite so hot at the start.

A GREAT IMPROVEMENT OVER OIL FIRING IN THE MATTER OF COMFORT TO WORKERS

Cost Comparisons

Accurate test data is difficult to obtain owing to the variable nature of the work. The weight of steel heated, however, is small compared to the size of the furnace. Hence the gas consumption is little more than that needed to maintain the temperature of the empty furnace. The average is from 45,000 to 50,000 cu. ft. per fifteen-hour day, and about 5 tons of steel is heated in the same period. At the prevailing rate for this plant of 57 cents per thousand, this is $25.63 to $28.50 per day. The oil furnace previously in use, which was 6 ft. shorter, used on actual test 457 gal. of fuel oil in a fourteen-hour run. For fifteen hours' operation 490 gal. would be required. Even at 6 cents per gallon this costs $29.40, while at the present rate of 8 cents it is $39.20. The power required for the gas compressor is, if anything, less than used by the blower for the oil furnace.

The burners are connected in pairs and the number used depends on the length of work to be heated. For example, if the work is about 15 ft. long, the burners in the rear half of the furnace are turned off. Even under these conditions, the temperature difference between the front and back is not more than 200 deg. Fahr. When long work is to be heated, more burners are turned on and the whole quickly brought up to the proper heat. The advantage of substantial construction and proper insulation is shown by the fact that even after being shut down for fourteen hours, the furnace is hot enough to light without a torch, and only forty-five minutes is required to bring it to the working temperature.

The chief engineer of the shipyard has expressed himself as being agreeably surprised at the monthly gas bill, and says that he does not see why anyone should use oil for this purpose if they could get gas. The workmen have commented particularly on the even heating of the work, which makes the bending operations much easier. The only criticism any of them offered was that the furnace "heated too fast."

This installation was designed and built by "The Surface Combustion Company, Long Island City, N. Y." It is located in the Marine Department of the Pusey & Jones Company, Wilmington, Del.

How the Gas Companies Are Helping the Nation

The Roswell Gas & Electric Company, serving Roswell, N. M., has six of its employees now in the army and navy. They also have quite a number of employees who are subject to draft, and they will await their call. The employees invested $2,000 in the Liberty Loan and contributed $500 to the Red Cross campaign. C. M. Einhart is superintendent of the company. The following are the employees now in the service of the United States:

J. C. Hamilton	First Lieut., Battery A, N. M. Artillery
Charles Wilburn	Aviation
J. E. Byruan	Navy
T. J. Hightwoer	Army
L. Spindle	Army
K. G. Salter	Radio

The Peoples Gas Light & Coke Company, of Chicago, has not only contributed several hundred men to the fighting branches of Uncle Sam's service, but has several hundred additional men enrolled in the reserve regiments of the Illinois National Guard. These men are put through regular army drill several times a week, and are liable for call at any time for home defense purposes. Several companies of Illinois infantry are now made up exclusively of employees from the Peoples gas company, the Commonwealth Edison Company and the elevated railways of Chicago. Below is a picture of a section of Company A, 11th Infantry, I. N. G.

(*Continued on page* 57)

CHICAGO GAS COMPANY BOYS AND THEIR OFFICERS, COMPANY A, 11TH INFANTRY, I. N. G.

Opinion General in Great Britain that Consumer Gets Little Better Value, If Any, from a 600 B.t.u. Gas than from a 525 B.t.u. Gas

Important Question Is Should Gas Supplied be Pure Combustible or Watered-Down High Quality Gas — Use of Nitrogen Not to Be Recommended When Blue Gas is Available

By NORTON H. HUMPHRYS

The consensus of opinion among those who actually come in contact with the gas consumer and the everyday conditions of consumption, is that in practice he gets little if any better value from a 600 B.t.u. gas than from a 525, on account of the greater facility afforded for wastage by the richer gas. Additional explanation might be offered on more scientific grounds, but obviously, this opinion cannot be confirmed by laboratory experiments, because of the impossibility of arranging them in a form that will fairly represent the multifarious conditions that obtain in everyday use.

The Important Question

The advantage of lowering the quality of the supply being granted, an important question is whether it should consist of pure combustible or of a watered down higher quality.

Attention has lately been prominently directed to the percentage of inert constituents or diluents in town gas as now supplied, as affecting the value received by the purchaser, and gas undertakings being dependent for their existence on the good will of the consumer, the popular character of their product and on giving a fair value, or what is generally accepted as fair value for money, cannot afford to overlook the matter.

It being understood that a 525 B.t.u. gas may consist of a higher quality thinned down with inert gas, say 81 per cent of 650 B.t.u. mixed with 19 per cent of nitrogen, or of pure combustible comprising a larger proportion of hydrogen and carbon monoxide, such as would be obtained by mixing 64 per cent of the rich gas with 36 per cent of blue gas; then the question arises, are these two gases equally serviceable to the user, to the maintenance of the credit of town gas, and to the financial and practical conditions of manufacture and supply? If not, which has the advantage?

Recently Acquired Knowledge of Composition of Gas

Opinions differ. Some claim that the consumer requires calorific value in the same sense that he used to receive photometrical value; that the calorimeter is the official testing instrument, and that a 525 B.t.u. gas fully fills the bill, irrespective of composition; or even carry the war into the enemy camp by asserting that in respect to flame temperature there is no choice between the two.

But oil washing has attracted attention to the composition of gas, and if an impression that it is an adulterated article gets abroad, a claim that the official test is complied with will not save the position. The progress of the industry has more than once been hindered and set back by popular impressions which were considered unworthy of notice.

Others say that the presence of inert matter of high specific gravity must necessarily tend to hinder the free admixture of the combustible with its proper complement of oxygen, causing a larger flame, and consequently a lower flame temperature.

Will customers who have been used to a 625 B.t.u. gas take kindly to a stripped gas loaded with 20 per cent of nitrogen?

The Inert Constituents

The inert constituents of coal gas are carbon dioxide, nitrogen, oxygen and water vapor, of which the last may be ignored, as it is automatically limited to the saturation point of the gas at the lowest temperature to which it is exposed, and will not exceed a small fraction per cent at the consumer's meter.

Among the unpreventable causes that tend to the presence of inert matters are the occlusion of such in the pores of the coal, or formation during the progress of destructive distillation.

The controllable causes are for the most part attributable to bad or negligent working, such as drawing in furnace gases through cracks in leaky retorts or by running the exhauster at excessive speed, incompetent management of the carburetted water gas plant, or excessive admission of air for the purpose of securing revivification of oxide in situ.

The first and second may introduce both carbon dioxide and nitrogen, and if the third is carefully limited to its proper purpose, it will only mean an addition of about 2 per cent of nitrogen to the gas.

Although, as a rule, it is not practicable to run special carbon dioxide purifiers, the proportion of this diluent can be kept down to about 2 per cent by efficient washing and scrubbing.

Excess of oxygen is usually avoided on the very reasonable assumption that it acts prejudicially on the interior of gas holders, wrought or steel pipe, and the cases of meters. So the principal diluent is nitrogen, and is to a large extent under control.

There is no reason why the non-combustibles should not be kept below 10 per cent by volume.

Nitrogen is twice and carbon dioxide three times as heavy as virgin coal gas, so this limit represents 20 to 25 per cent by weight, and the proportionate weights are considered in many heating problems rather than the volumes.

Inert Matter a Source of Expense

Viewed from outside of the counter, the inert matter is a source of considerable expense, and in the long run there is no corresponding advantage to any of the parties concerned.

The cost of storing and distribution is influenced by bulk irrespective of quality, and is the same for inert matter as for a 1,000 B.t.u. gas, apart from the effects of increased specific gravity.

If 20 per cent of nitrogen is distributed, the whole of the plant must be at least larger in equal proportion, from the gas holder up to the burner.

The reduction of the heavy and oily hydrocarbon, together with increase of specific gravity, tends to the production of a lean dry and hungry gas that will promote corrosion in the pipes and meters.

Importance of Flame Temperature

It is known that the incandescent burner needs flame temperature as much if not more than calorific value, and the same may be said of many industrial prospects. In any case the consumer cannot utilize the heat to the dregs, as may be done in the calorimeter, by reducing the products of combustion to atmospheric temperature.

There is wastage according to the working temperature, which occasionally may be reduced by regeneration.

He can only utilize the proportion that is above a certain temperature.

In the very common operation of boiling water, the products of combustion pass away at about 300 deg. Fahr., and the heat so carried off is dissipated and wasted. With a flame temperature of 2,500 deg., it may be called 12 per cent, and with one of 3,000 deg. it is reduced to 10. The greater the working temperature, the greater the relative economy of a high flame temperature.

This is an important consideration in view of the increased utilization of gas for melting metals and other high temperature processes.

Use of Nitrogen as a Diluent

It has been said that one advantage of a lower quality gas is a higher flame temperature, but this only applies to a lower oxygen requirement, and in no sense to gases that simply rob the flame of heat without contributing anything to the useful effect; 20 per cent of nitrogen passing into the base of a flame at 60 deg., and leaving the top at 2,500 deg., can in no way assist flame temperature. Diluents tend to enlarge the flame and reduce the temperature, and resemble the effects produced by burning gas in a bad atmosphere.

The use of nitrogen as a diluent is not to be recommended when blue gas is available.

Graphite for Prevention of Corrosion

Graphite is the most water-repellent pigment known, and paints made with it are the best water excluders, thus preventing corrosion.

Because of the unctuous quality of the graphite, the paint is easily applied, thus insuring good work, and good work is as important as good paint.

Making the Manager's Salary Dependent Upon the Output

What Constitutes a Good Manager — Qualifications that Make for Success

By AN EXPERIENCED GAS ENGINEER AND MANAGER

Let us consider what the accomplishments and the requisites of a successful manager of a gas company must be. First, he must be a good executive, one who can deal and handle the public with the least amount of friction; he must develop a pleasing personality and be a good mixer. (To be this, he must naturally develop a good and substantial name in the community in which he operates for excellent character, sterling integrity and good habits.) He must develop a will power, as well as a tendency to see the consumers' side as well as his own, so that when the consumer comes to him he can give the consumer the feeling that he is dealing with a man who is anxious to give him a square deal.

There has been more harm done to gas companies by managers who lack this essential than most anything else. It has brought dissension between the gas companies and municipalities. It has brought newspaper criticism, and many men who thoroughly understand the operating end of the gas company have failed entirely on account of their inability to deal with the public properly. The writer knows of some managers from whom only the President of the United States could get anything but a gruff answer.

If a consumer feels that he has been overcharged, it does not help matters to tell him gruffly that was what the meter read, and unless he paid his bill his meter would be removed. This makes the consumer antagonistic; it brings on newspaper controversy, and usually ends up in a great deal of trouble for the gas company as a whole.

It has been a known fact that some men who hold the position of manager have lost more consumers through undiplomatic dealing with the public in one month than the new business department could get in a year. Therefore, another requirement of a successful manager is diplomacy.

An Understanding of Works Operation

He must also understand works operation; to know when he is getting the best results, and the best gas from his gas plant, and the raw material he has on hand, and not try to force his works superintendent or engineer to get results away past his power.

It is not necessary for him to be a high-class gas engineer, as the writer has found that a good executive and commercial man makes a better general manager than a good gas engineer and operator who has no executive or commercial ability.

It is not necessary for a man to understand all the engineering details, although it is a good thing for him to know. But he must have knowledge enough of the manufacturing end to know how to get the best results at a minimum expense and still not "rob Peter to pay Paul."

In the distribution department he must have enough knowledge to understand his distribution system, the handling of gas, and also know when and how to make extensions, and still hold the service given by the distribution system at a high point.

Knowledge of Commercial Department

In the commercial department he must first know what to buy and how to buy it. He must learn and then know that quality rules over quantity. He should be able to know how to ascertain which is the best gas stove, water heater, mantles, etc., to handle. In other words, he must know what to buy, which will give his consumer the highest efficiency and the best of service. He must know how to plan sales campaigns, and how to get the best results from same. Therefore, another requisite is that of a purchasing agent and an expert salesman.

Industrial fuel is now here to stay, and a successful manager should be well up in this department. He ought to know which is the best appliance for each industrial installation. He must know how it should be installed, and should be thoroughly familiar with its operation. All of this requires knowledge and study.

Handling Men

He must be able to handle men and hold the good will of his employees, and know what to pay them. Therefore, he is also required to be a good organizer.

The above are a few of the main essentials required from a man who manages a gas plant, but there are many others.

Therefore, considering these, a manager is required to know considerable, and the manner of how to compensate him is a problem.

It is usually a case of employing a man and paying him a straight salary. This, in the writer's judgment, has been very poor policy. It gives a man no inducement that will bring out his best efforts, and so many men get into a rut and just do their work and stop.

They lose ambition, as there is nothing to look forward to, outside of a possible increase now and then. Therefore, the writer has always felt that the proper way to compensate a manager is to give him something to work for which will bring out his best efforts. To do this the following plan is the writer's idea:

The manager's salary should be based on the number of cubic feet of gas sold, namely, a fixed charge of so much per thousand cubic feet of gas should be the manager's salary, and as increases are shown in the sales, increases of salary should be given him.

As a supposition, we will take a plant selling a hundred million cubic feet of gas per year. At two cents per thousand for manager's salary, he would receive two thousand dollars a year salary.

Now through his efforts he increases the sales to a hundred and fifty million. The following year he should receive an extra thousand dollars, or three thousand dollars, per year.

Advantage of Plan

This would mean a sort of bonus system, based on a guaranteed salary, plus a bonus. To show this increase, he must first see that good gas is made, that good service is given through the distribution system, that his help will treat the public properly, that he buys the proper appliances that give satisfaction, and that also proper sales campaigns are put on. Then he, himself, must know how to handle the public to bring this on.

Therefore, he ought to be entitled to a certain percentage or amount for each thousand cubic feet of gas sold through his efforts.

This plan will give a man something to work for, and if he, through lack of ability, application and mismanagement, fails, he has no one but himself to blame.

How the Gas Companies Are Helping the Nation

(*Continued from page* 54)

Every man in the picture with the exception of some of the officers is an employee of the gas company. Sitting on the extreme right of the first row is Samuel Ward, son of the first vice-president of the Peoples company. The third man from the left among those standing is Reid Cameron, manager of the water heater section of the gas company, and quartermaster sergeant in rank. Among the latest of the gas company's men to enter military service is A. A. Lindsey, of the advertising department, who has just been appointed quartermaster's sergeant of Company C, 4th Infantry, Illinois National Guard.

The Consolidated Gas Company, of New York, in addition to those names already published in previous issues of the Journal also has the following employees absent from its offices and doing military or naval duty:

John Kelly	National Army
Clarence V. Kelly	Navy
James Kelly	12th Infantry, N. Y.
J. Kenny	71st Infantry, N. Y.
Thomas J. Kenny	69th Infantry, N. Y.
James Kerrigan	National Army
Russell King	Navy
J. Kirincie	Regular Army
J. Klein	Regular Army
John Klein	22nd Engineers, N. Y.
B. Klvana	Navy
E. Knobloch	National Army
L. Knudson	Regular Army
Charles Koch	12th Infantry, N. Y.
C. H. Koopman	Naval Reserve
Joseph Kosanke	Navy
Ed. R. Kruger	1st Cavalry, N. Y.
G. Kurtz	Naval Militia
Frank La Gumina	Navy
E. Laird	12th Infantry, N. Y.
F. J. Leary	69th Infantry, N. Y.
J. Leonard	Regular Army
J. G. Leslie	National Army
Arthur Lewis	National Army
Edward E. Lewis	10th Infantry
Percy Lewis	National Army
Fred. Lippus	National Army
Robert Lockhart	14th Infantry
Daniel Lomolino	Regular Army
John Lowry, Jr.	12th Infantry
B. Lynch	National Army
Patrick Lynch	National Army
Royal Madden	14th Infantry
Andrew Maguire	National Army
Edward Maguire	Artillery

F. C. Martineau.....National Army
Samuel Marks.....National Army
R. Mahon.....National Army
William F. Maier.....National Army
F. Maley.....Regular Army

Leo. A. Mangan.....National Army
G. S. Malloy.....69th Infantry, N. Y
Thos. J. Mangan.....105th Infantry
J. Markham.....12th Regiment
William Maroney.....69th Infantry

C. L. L. Martin.....Regular Army
G. Marturo.....47th Infantry, Regular Army
J. Marshman.....13th Coast Defense
H. Matthews.....15th Infantry, N. Y.
Thomas Matthews.....69th Infantry

G. J. Maule.....Infantry
William R. Maurer.....Aviation
C. Mayer.....22nd Engineers, N. Y.
Daniel F. McAlevey.....Navy
H. McCauley.....National Army

J. McClash.....69th Infantry, N. Y.
F. McDonald.....9th Coast Defense
M. McDonald.....69th Infantry, N. Y.
J. McGrath.....First Engineers
W. McGinley.....1st Field Artillery, N. Y.

Thomas McGrath.....Regular Army
Thomas McHale.....National Army
John McKeon.....8th Coast Defense
A. McLean.....Squadron A, N. Y.
J. McLean.....10th Infantry, N. Y.

THE CITIZENS GAS COMPANY, of McCook, Neb., and its employees have subscribed the sum of $1,250 to the Liberty Loan and Red Cross campaigns. F. A. Pennell is general manager of the company.

THE KANSAS CITY GAS COMPANY, of Kansas City, Mo., has eleven of its employees in the military and naval services of the United States. The following are already stationed at the different camps:

James A. Browne.....Canadian Infantry
A. C. Fackert.....Ammunition Train, Q. M. Dept., Kan. N. G.
George G. Gray....Ammunition Train, Q. M. Dept., Kan. N G.
H. Lee Lackey.....Ammunition Train, Q. M. Dept., Kan. N. G
Lyman S. Mackie.....Co. B, Kansas Engineers

Preston M. McClure.....20th Engrs., N. A., Washington, D. C.
Benj. H. Nute.....Ammunition Train, Q. M. Dept., Kan. N. G.
Clarke E. Rigsby.....Co. B, Kansas Engineers
Milton E. Swartz.....Battery F, Missouri Field Artillery
Ortley N. Wherrett.... Headquarters Co., Camp Funston, Kan.

LUTHER GASTON, new business manager of the Knoxville Gas Company, Knoxville, Tenn., and a member of the National Guard of Tennessee, has been appointed a recruiting officer.

A. C. ANDERSON, formerly of the Sioux Falls Gas Company, Sioux Falls, S. D., is now with Company B, 04th South Dakota Infantry.

THE SOUTHERN PUBLIC UTILITIES COMPANY, of Charlotte, N. C., has eight of its employees from the gas and electric departments now in the military and naval service of the United States:

L. D. Weeks — Willis Yandle
W. P. Costner — Lloyd Baker
Fred Rudesill — Fred Teeter
J. N. Calder — C. B. Hartis

THE CHARLESTOWN CONSOLIDATED RAILWAY & LIGHTING COMPANY, of Charlestown, N. C., has the following employees' names among those on its Honor Roll:

J. Benedict.....Naval Reserve Force
Wm. C. Bingham.....National Army
C. A. Brown.....Co. C, 2nd S. C. Infantry
L. E. Burmester.....Co. C, 2nd S. C. Infantry
E. de Bruijn.....Tr. A. S. C. Cavalry

James C. Driggers.....National Army
W. H. Holl, Jr.....Naval Coast Reserve Force
J. P. Jellico.....Co. C, 2nd S. C. Infantry
Carl S. Maree.....Quartermaster's Dept.
C. Matson.....U. S. Navy

James Maull.....S. C. National Guard
William McClain.....Co. C, 2nd S. C. Infantry
L. A. McClary.....Timmonsville Guard, 2nd S. C. Infantry
Newton J. Murray.....Tr. A. S. C. Cavalry
Walter M. Saye.....Co. C, 2nd S. C. Infantry

W. Schleppergrell.....U. S. Navy
L. H. Sigwald.....U. S. Navy
A. Weber.....Co. C, 2nd S. C. Infantry

THE OMAHA GAS COMPANY, of Omaha, Nebr., has on its Honor Roll the following names of its employees:

Jess H. Alexander.....Machine Gun Co., 4th Neb. Infantry
Elmer F. Allen.....Co. B, Neb. Signal Corps
Herman Anderson.....Camp Funston, Kan.
H. J. Badgley.....Camp Funston, Kan.
E. A. Bahnke.....Army

Earl A. Edwards.....Aviation Corps
Wm. H. Hudson.....U. S. Navy
Russell G. Hughes.....Co. L, 3rd Iowa Infantry
Paul F. Karst.....Camp Funston, Kan.
Verne Manning.....Co. B, Neb. Signal Corps

Einar T. Pedersen.....Quartermaster's Enlisted Reserve Corps
J. A. Sayles.....Officers' Training Camp, Fort Snelling, Minn.
John G. Schramek.....Co. D, 6th Neb. Infantry
Paul Surenky.....6th Neb. Infantry
John M. Watt.....Naval Reserve Corps

Harold G. Whitney.....N. G., Iowa
G. H. Womack.....Aviation Corps

SETH K. CHASE, one of the statisticians of the Peoples Gas Light & Coke Company, of Chicago, Ill., has gone to Washington, D. C., and it is understood he will soon receive a commission as major, being assigned to the machine gun designing division of the United States Army. At the offices of the Peoples company it was said Mr. Chase knows probably more about gas rates and their combinations than any other man in the country.

SAMUEL INSULL, JR., son of the chairman of the board of directors of the Peoples Gas Light & Coke Company, of Chicago, was designated first alternate for West Point admission examinations in an announcement made by the War Department at Washington last week. The examinations are set for March.

Merchandising Gas

Demonstration in Saving Fuel for Baking

"Conservation" is the watchword of American business and American homes, and the H. A. Johnson Company, bakers' supplies, of Boston and New York, is doing its bit in the direction of food conservation. The most essential thing, they argue, after having the ingredients of good quality, is that the goods shall be properly baked.

In conserving coal, coke and oil, many people are using gas for fuel, and this has been very successfully used in the bake oven designed for this purpose by A. D. Ordway. The H. A. Johnson Company exhibited some of these ovens in operation in the window of the Boston Consolidated Gas Company, 16 West Street, during the week of Dec. 10 to 15. This oven was particularly designed for gas, and it was demonstrated that it would only lose 50 deg. from 5.30 p. m. to 8.30 the next morning, and bread was baked at the end of this period without additional fuel.

During this demonstration the oven was put to the most rigid test and it was demonstrated that it was possible to use gas as economically as anthracite coal or coke. The J. B. Blood Company, of Lynn; the Mohican Company, the Marston Company and the Waldorf Lunch, of Boston, have demonstrated that this oven will save at least 25 per cent of the fuel, whether coal, coke or gas.

Continuous System of Reading Meters and Mailing Bills at Beverly, Mass.

Beginning Feb. 1 the Beverly Gas & Electric Company will adopt the so-called "continuous" system of reading meters and mailing bills, the new plan being adopted owing to conditions created by the war and the necessity for distributing the work as equally as possible for the meter readers and office staff. Under the old plan the bills were read between the 15th and 20th of each month, and were mailed on the 1st of the month.

The city is to be divided into about twenty-four districts. The gas and electric meters in the first district will be read on the first working day of each month and bills will be mailed two days later. The meters in the second district will be read on the second working day of each month and bills mailed two days later. The meters in the third district will be read on the third day of each month and bills mailed two days later, and so on. Ten days from the date of mailing bill will be allowed in which to secure the discount for prompt payment. Discount dates will be

(*Continued on page* 64)

Direct By Mail Advertising Has Been Proved Most Effective in Co-operative Sales Service of Manufacturer and Dealer

Literature Should Present a Very Definite Proposition and Circulation Should be Coincident with Canvassing — Campaigns Should Not be Started Without Careful Deliberation

By H. G. MENTZER
Pittsburg Water Heater Company, Pittsburgh, Pa.

It is natural that the manufacturer should have a keener interest in the sale of his product than the dealer. A sense of the need of advertising and developing sales, to help dealers sell goods, has deeply impressed itself upon hundreds of manufacturers.

Of the many methods that have been tried in this co-operative sales service, direct by mail advertising, has proven the most efficient. This method is direct, local and intensive. The manufacturer puts himself at the command of the dealer, who actually has his goods for sale. All the money and all the personal sales assistance goes right straight to his aid.

This direct by mail literature, should present a very definite proposition. The merchandise plan should be carefully considered. The story should be told in strong language, brief but full of force and point.

While the mailing campaign is the hub of the service, it is not at all sufficient. This fact must be kept in mind. To depend upon the inquiries or calls in response to the letters and literature would probably spell failure. The salesman must go out after the people. Every prospect on the list should be personally seen and carefully studied at the first interview. Further follow-up should be determined by that study.

In addition to this mailing campaign, the manufacturer must supply the dealer with advertising material that will connect his store with the campaign. Window trims, show cards, counter displays, booklets and literature of all sorts, wisely shown about the dealer's store, will help to "tie in."

Newspaper Advertising One of Strongest Supporting Features

Newspaper advertising is one of the strongest supporting features. Local newspaper space should be liberally used. Good copy and display

(*Continued on page* 63)

AMERICAN GAS ENGINEERING JOURNAL

FIFTY-NINTH YEAR

Published Weekly by
AMERICAN GAS LIGHT JOURNAL, INC.
42 Pine Street, New York, N. Y.

ELBERT P. CALLENDER, *President*
STANTON G. KRAKE, *Vice-President*
FREDERICK A. SOUTHWORTH, *Secy-Treas.*

EUGENE C. MILES, *Editor*

Subscription $3.00 per year, including postage in the United States, Mexico, Cuba, Porto Rico, Hawaii or the Philippines.
In Canada, $4.00 Foreign, $5.00
Single Copies, 10 Cents.

WESTERN MANAGER
E. B. FRITZ

CHICAGO OFFICE
537 So. Dearborn St.

Entered at the Post Office, New York City, as Second Class Matter.

CONTENTS

INDICATIONS ARE THAT CONSUMPTION OF MOTOR FUEL WITHIN NEXT DECADE WILL BE DOUBLE PRESENT TOTAL OF GASOLINE PRODUCTION. BY J. E. BULLARD 49

"TO BURN GAS IS TO ECONOMIZE COAL," THE SLOGAN IN FRANCE. BY FRANCIS MILTOUN .. 51

HOW SOON WILL HEAT INSULATING MATERIAL PAY FOR ITSELF? BY W. F. SCHAPHORST 52

GAS-FIRED SHIPYARD FURNACE BURNING OVER 3,000 CU. FT. PER HOUR BETTERS OIL-FIRING COST WITH OIL AT 6 CENTS PER GALLON. BY WILLIAM J. HARRIS, JR 53

HOW THE GAS COMPANIES ARE HELPING THE NATION 54

OPINION GENERAL IN GREAT BRITAIN THAT CONSUMER GETS LITTLE BETTER VALUE, IF ANY, FROM A 600 B.T.U. GAS THAN FROM A 525 B.T.U. BY NORTON H. HUMPHRYS 55

EDITORIALS 60

MERCHANDISING GAS 59

DIRECT BY MAIL ADVERTISING HAS BEEN PROVED MOST EFFECTIVE IN CO-OPERATIVE SALES SERVICE OF MANUFACTURER AND DEALER. BY H. G. MENTZER 59

NEWS OF THE GAS INDUSTRY 65

SOCIETIES AND ASSOCIATIONS 71

PERSONAL NOTES 71

Obstacles in the Way of an Immediate Resumption of Gas Works Extensions and Construction Not Insurmountable

Many gas men are skeptical of the possibility of any immediate resumption of gas works extension and construction. Few of them doubt, however, that such a development would be directly of benefit to the nation in the conduct of the war. What, then, are the obstacles that stand in the way?

First and foremost, at the present time, is the desire to avoid the appearance of prospering as usual, while other industries are being curtailed. These men, who more than any others, guide the destinies of the gas industries, not only do not seek to avoid the sacrifices that a state of war entails, even to the most fortunate, but they want even so avoid the appearance of such tendencies. Before one of these men would bend an effort towards affecting a resumption of construction on a development scale, he would have to be certain that the important relation of the gas industry to war-time needs, and the benefit the nation would derive from an increase in gas supply facilities, was fully comprehended by the Government and the public at large. For the sake of the repute and laboriously built-up good will the industry has acquired there could be no risking a possible misunderstanding of its motives—no appearance of growing unwarrantably while others of necessity stood still. Such a possibility would be repugnant to the spirit of anyone who has the present and future interests of the gas industry at heart.

Secondly, there is the declared desires of the Government that any construction that is not directly essential to the conduct of the war be withheld until more propitious times. We know that in the minds of governmental authorities the construction of toluol plants, etc., is deemed essential. We have encountered no statement, however, from any authoritative Government official suggesting in a general sense that extensions of gas making and distributing capacities are deemed essential construction. We must, therefore, infer that it has not been proved as yet to these officials that such undertakings by materially reducing in the adequate the amount of coal consumed in the home, in the industries and in general would contribute largely towards the solving of two of the most complex of the war-time problems, namely, coal supplies and transportation. Gas men are convinced of this, but their convictions are founded on an intimate knowledge of the gas business. The governing powers have manifested a willingness to give consideration to suggestions from anyone who has information of real value to offer and who is actuated by honest motives. The gas man should find no difficulty in impressing upon the Government the fact that gas works construction is a class of con-

struction that is essential to the most efficient conduct of the war.

A third obstacle is in the matter of capital. No sound investor will spend three million dollars to-day on a plant he may be able to build five years from now for a million, if he is to be held to a rate ten years from now based on the cost of reproduction of the property at that time. This would give a mighty small interest on the three million dollars. This is a matter of regulatory commissions to lay down rulings on. If they are convinced of the immediate need or desirability of the construction there should be no difficulty in getting them to do so.

Helping Ourselves as Against Waiting to Be Helped

The AMERICAN GAS ENGINEERING JOURNAL is convinced that there are few gas men who do not appreciate that their's is a national service. It is not so convinced, however, that they sufficiently appreciate this to impel them to that aggressive discharge of their allotted portion that can come only with an unquestioning confidence in the importance of their task.

The general defeated in attack would receive scant consideration if he sought to excuse his failure on the plea of insufficiency of supplies. In the first place, he would have no business to attack unless he was prepared to carry it through. He alone is responsible for the success of his army. If someone behind the lines had been lax in getting to him the essential it was his business to bring the laggard to task and to see that the shortcomings were corrected. Ability to accomplish this despite red tape and other obstacles has characterized all of our great generals. Those who have won the decisive battles have not been the kind who sat tight in their camp chairs and murmured, "If those behind permit me I will win the battle." They saw to it that those behind did their work.

Cooking by gas, heating by gas, etc., save coal. The saving of coal is a foremost national service. It also saves transportation, another essential national service.

There is a great deal of cooking by gas and heating by gas that is not being done, though the public would gladly have adopted the method, simply because gas companies could not obtain sufficient coal. The gas company itself is alone responsible for this condition. An extraordinary statement, you will say —everyone knows the gas companies have been making every effort to get coal, even to the extent of sending inspectors to the mines. But have they made the most effective effort; have they adopted the course that would make the work of their representative in Washington on fuel matters merely a matter of easy routine?

There is a fuel administrator with the whole authority of the Government behind him. It would be an ideal state if this one man could have at his fingertips a minute knowledge of the gas business, the electrical business, the chemical industry, the metallurgical industries, etc. Then, if any gas company had to refuse gas for cooking to any patron it would be the Government's fault that that individual was using eight hundred pounds of coal to do his cooking whereas less than two hundred pounds, if first turned into gas, would suffice.

But if such an ideal, so extraordinary a man, is in existence, he is not now, to the best of our knowledge, in the service of the Government. It is therefore the duty of the gas industry, not to itself so much as to the nation, to bring such facts to the fuel controller's attention. It is lax in the discharge of its obligation if it sits back and waits for him to come around knocking at its door before it imparts the information it possesses. It might have to wait a very long time. The fuel controller has many other matters of importance to occupy his mind. And in the meantime a situation that might be almost immediately to a very appreciable extent remedied will keep on getting more complex.

Our Organizations After the War

Unhappy, indeed, and, possibly, poorly managed, is the company that needlessly, through layoff or resignation, loses an efficient man from its organization.

Things are not going to be the same after the war as they were before. Because we have sent so many men to the trenches does not mean necessarily that we are going to get that number, less those disabled, back into the organization when the need of their military services is past.

These men are learning more than simply how to be soldiers. They are becoming aviators, motor specialists, bridge builders, etc. The salesman who left us may not care to engage in merchandising when he comes back. It may be that he will prefer to deliver mail by airplane. The industrial fuel man might have so gotten in touch with motor-truck construction details that, combined with the knowledge of gas fuel he acquired in our industry, he might see a brighter future for himself in forsaking us.

A good policy would seem to be in holding on to what we have. Those that leave us to enter the national service we must not complain of, but those we lose because we cannot provide productive work for are evidences of poor management that may cost us dearly.

The Need of a Complete Record of a Big Event

In last week's issue we published an account of the manner in which the New York City gas companies had coped with unprecedented loads through several successive days. We pointed out the significance and importance of their achievement editorially in the same issue.

It does not seem farfetched to term the achievement an epoch-making event in the gas industry. As such it should be given a fuller treatment than a mere news record could possibly supply. A complete and detailed account of the situations that were met and the manner in which they were handled is deserving of a prominent place in the history of the American gas industry.

Now is not the time to prepare such a record. The smaller contributory details are too apt to be submerged in the maze of highly important matters. The gas industry and those who would be best equipped to prepare a history of the events that so recently have happened are, literally speaking, up to their shoulders in work. Being a gas man now means more than being merely a maker and seller of gas. He has responsibilities upon him that he would never have had to carry had the country not gone to war.

But there will be a let up sometime. Summer will come, and these men will be freed from one great responsibility at least. Sooner or later the work that is being done to assist the nation will merge itself automatically with the usual routine.

When such time comes a complete history should be prepared of the crisis the New York companies have fought through, and printed in the permanent records of the gas industry.

Deferred Construction Orders

A contemporary, which flatteringly echoes our prophecy that the gas industry is on the threshold of its greatest construction era, has fathered the idea of placing tentative plans for new construction and making reservations with constructors for their execution. It derives its inspiration from a practice it declared British automobile manufacturers have adopted, of *using big space to advertise* cars for delivery after the war. in the order in which contracts are booked, and leaps to the conclusion outlined.

Apparently our contemporary has not familiarized himself with the ins and outs of the construction field, and building an automobile has certain points of dissimilarity to building a gas plant. One can obligate himself to buy a "pig in a poke," in so far as an automobile is concerned, without risking utter and complete financial collapse. A gas plant, however, can run into pretty considerable figures, and it is possible that some plants now contemplated in new territories may never be built, at least for very many years.

Of course, if our contemporary has a real knowledge, that we confess we do not possess, of what the trend of prices will be in the next decade, we retract all we have said. He is not then guilty of superficial thinking, but has a sound basis upon which to build. But we are skeptical as to his being possessed of this knowledge. A great many very deep thinkers are interesting themselves very much in this matter. Some have reached certain conclusion and published them with supporting facts, but to the best of our knowledge no generally accepted conclusions have been reached.

Unless all precedents are to be shattered, the AMERICAN GAS ENGINEERING JOURNAL is convinced that the law of supply and demand is going to govern quite largely priorities in after-war gas works construction. The company that wants its work done promptly ten dollars' worth per item is going to find a great many more bidders than the company that wants its work done promptly only to the extent of a dollar per item.

Where to Get Coal Conservation Data

Good steam engineers are familiar with well-tried ways of reducing both consumption of coal and consumption of heat; their advice should be obtained in all practical cases; this is not a time for radical innovations, but for utilizing tried experience.

One pound of coal per hour has yielded a horsepower per hour. That is the record of present possibility. It cannot by any manner of means be attained by every plant. But the fact that at present the average attainment throughout the country is but one-third or one-fourth of this record is indicative of the possible savings that can be made if the care and attention which the power plant deserves are actually given to it.

Most users of coal can join in promoting efficiency of coal. Railways have made real progress in firing locomotives; they can often go farther. Many gas works can generally effect further saving by using careful technical direction. Manufacturing plants of every degree can show great results in the aggregate.

The Bureau of Mines, in behalf of the Federal Government, has gathered a great deal of information about the use of coal and has expert advice to give regarding means of economy. Some of the publications in which the Bureau of Mines has embodied the results of its experiments and made practical suggestions based upon expert observations and conclusions of its staff and other engineers may be obtained by writing the chairman, address given below. In many instances State agencies, too, have data and suggestions which are to be had for the asking.

COMMITTEE ON COAL CONSERVATION
OF THE
CHAMBER OF COMMERCE OF THE UNITED STATES,
ERNEST T. TRIGG, *Chairman*,
Washington, D. C.

Direct by Mail Advertising Has Been Proved, etc.

(*Continued from page* 59)

in newspaper advertisements will make doubly sure the success of the campaign. Almost every manufacturer is willing to supply newspaper advertisements and place their advertising department at the dealer's service to compile special copy.

Campaigns should not be started without careful deliberation. All points should be carefully considered, and all literature employed in a systematic fashion. Chances for failure should be and can be eliminated by careful preparation in advance.

Importance of List

The most essential factor that enters into the campaign is, of course, the mailing list. Great care should be taken to secure the names of people who are in position to buy the advertised article. The dealer should be cautioned to supply these names properly and to give the correct street address, so that the post office will be able to make delivery. More failures are directly traceable to hastily prepared lists, and more crimes are committed in the name of direct advertising, because of the quality of the list, than to any other one cause.

There are still a great many people who think a list is a list. When they are planning a campaign they get the office girl or stenographer to check off names from some telephone book, directory or rate book, and they are usually the very first to cry out, "Direct advertising doesn't pay."

Percentage of Changes

On the average list of householders there are about 22 per cent changes every year. Dealers' lists fluctuate 15 per cent, while some classes—like barbers—change to the extent of about 29 per cent a year. It is, therefore, important not only to get the list as nearly right as possible in the first place, but keep this list up to date by frequent revisions.

A normal return of undelivered mail on any up-to-date list is from 1 to 2 per cent, so don't be alarmed when non-delivered mail comes back. This is not the sign of a good or bad list. Remember, it is the per cent of inquiries or sales that determine the value of the list.

Manufacturers who have products that could be demonstrated should use this channel to the full extent during the life of a campaign.

Neither a Miracle or a Mystery

Direct by mail advertising is neither a miracle nor a mystery. It is a plain business proposition that should not be plunged into with the idea that it will through its own power put through a sales yield. It is like any other business adventure, it requires considerable study and planning. Count the cost just as you would if you were figuring on a job and know just how much you are going to spend and what the reasonable results should be. This is the safe way.

At this point the question might arise in your mind, "What has all this to do with merchandising gas?" We all agree that the only way to merchandise gas is through the appliance field. The more appliances that can be sold, the greater the consumption. Consumers must be educated. They know appliances increase their bills, and are satisfied to stand this increase if the appliance gives maximum service and comfort.

By No Means New in the Field

Direct by mail advertising is by no means new in this field. Almost every manufacturer of gas appliances has at some time or other conducted a direct by mail campaign, and the most of them will say "it didn't pay." This may be true, but if the facts of the case were taken into consideration, you would find that the campaign was not planned, but was an idea that came to light and used without any consideration, except possibly that it did not cost much and would be a good thing. Of course, it did not pay. The most essential facts had never been thought of. If you are contemplating any direct mail advertising by all means do not go at it in this haphazard fashion.

Well-Planned Campaign Bound to Get Across

A direct by mail campaign that has been studied from all angles is bound to "get across." A campaign of this character has been perfected by the Pittsburg Water Heater Company, featuring their "Pittsburgh" and "Pittsburgh - Bungalow" Automatic Gas Water Heaters. It is really more than a campaign—it is a co-operative sales service that enables their dealers to sell their water heaters with less effort and less expense than the old "rule-of-thumb" methods.

This campaign consists of three letters and two mailing cards mailed at intervals of usually seven days to a carefully studied and selected list of their dealers' prospects. The letters are brief and to the point. They are gotten up to appear as though they are the gas companys' own enterprises, being signed with the facsimile signature of the commercial manager.

A neat descriptive folder and self-addressed return card are inserted in the envelopes. The mailing folders each present a different appeal and serve their purpose well. The literature is mailed from the gas companies' local post office at definite intervals, intensive follow-up work having been planned when the campaign was considered, starting shortly after the first piece has been released. Usually a special demonstration week is planned, about the third or fourth week of the campaign. Attractive announcements are sent out to the prospects advising these dealers just a few days prior to the time.

Effects Felt for Months

Supplementary literature, window display, newspaper ads and posters are supporting features and are employed in a systematic fashion. The effect of the campaigns are felt for months afterwards—as the salesmen go about their regular work they pick up many sales that were started during the campaign. Many gas companies have made more sales during this campaign than they have in an entire year. This campaign has stood the test, and proves that sales promotion work must be studied on every conceivable angle.

The water heater department of a gas company can be made a real department with the aid of intensive, direct by mail advertising, selling merchandise at a profit and merchandising gas at the same time.

Factory Order for 77 Gas Arcs Secured by the Knoxville, Tenn., Company

One of the largest factory lighting orders ever taken in Knoxville, Tenn., was secured recently by K. B. Duncan, a representative of the Knoxville Gas Company. The order called for seventy-seven inside gas arcs.

Continuous System of Reading Meters, Etc.

(*Continued from page 59*)

plainly stamped on all bills. For example: The customer whose meter is now read on the 19th day of January will on Feb. 1, 1918, receive his regular bill for consumption up to Jan. 19, 1918. If he is in the district in which the meters are to be read Feb. 1, he will receive on Feb. 4 a bill for consumption from Jan. 19, 1918, to Feb. 1, 1918. This bill must be paid on or before Feb. 14 to receive the discount. If he is in the district which is to be read the 14th of the month he will receive a bill on Feb. 16 for consumption from Jan. 19, 1918, to Feb. 14, 1918. This bill must be paid by Feb. 26, 1918, to receive the discount. If he is in the district which is to be read the last of the month—say, Feb. 25, 1918—he will receive a bill on Feb. 27 for consumption from Jan. 19, 1918, to Feb. 25, 1918, and this bill would have to be paid on or before March 8, 1918, to receive the discount. After the first change in February, customers will receive bills on the same day each month.

1917 Report of the N. C. G. A. Window Display Committee

The latest issue of the National Commercial Gas Association *Bulletin* contains the following interesting report of the window display committee:

This committee is able to report a real improvement and enlargement in the window display service which was undertaken first in May, 1916.

Beginning with the new fiscal year, November, 1916, in addition to the two displays offered by the National Commercial Gas Association, a third has been published each month under the title "Gas Displays That Have Made Good." These samples of good display work have come from Des Moines, Boston, Auburn, N. Y., Philadelphia, Westchester, N. Y., Lewiston, Idaho, Toronto, St. Louis—distributed over an area which represents the spreading interest in our work. One result of this department in the service has been the accumulation by the association of a large number of photographs of excellent displays which have been sent in by gas companies throughout the country. These form a valuable file and may some day be published for the benefit of gas companies.

The service began, in December, 1916, a series of informal and practical talks on good theory and practice in window displays. Such subjects as backgrounds, getting variety into a window, photographing windows, tying up with other advertising, promoting selling ideas, etc., have been discussed in plain, businesslike terms, and have contained many suggestions of value.

In January we introduced the pen-and-ink sketch as a substitute for the photograph of a completely set-up display. This found favor with subscribers and has been used since from time to time.

Early in the year the subject of simplifying the preparation of the service was discussed. The plan of having the *Dry Goods Economist* design and set up the displays for photographing necessitated (1) a great deal of inconvenience to both the association, the committee and gas appliance manufacturers in securing, shipping and returning goods lent by the latter for the purposes of the display; and (2) the inspection and criticism of the display by some member of the National Commercial Gas Association staff to insure the making of no mistakes or incongruities in the use of gas appliances in the set-up. The matter was discussed with R. R. Young, new business manager of the Public Service Gas Company of Newark, and a suggestion made which has since been carried out. In August the Public Service Gas Company built a studio window and undertook to supply to the association each month four gas displays. The September, 1917, folder contained photographs of displays made under the new arrangement, and the increase in number, with no increase in price, is another indication of the expansion of this service as undertaken by this committee. The new arrangement promises to be more satisfactory than the old in every way, and it can be made even more valuable to subscribers if the display men of gas companies will send suggestions and criticisms to the committee or the National Commercial Gas Association.

Speaking of special displays furnished by the service, we wish to mention the very excellent example provided in April for National Gas Range Week. This included a set of three window stickers furnished free to all gas companies. In May a special Gas Water Heater Week display was built around a screen printed in five colors. The screen, designed and printed by the association, was sold at a nominal price, and although it was not a financial success it may be taken as an experiment to show what can be done in the way of display properties for gas companies at small cost. In June an extra display was given for the opening of the National Canning and Preserving Campaign, which proved such a great success.

As to the number of subscribers, it is not possible to give this for exactly the term of the fiscal year. The service was started officially in July of 1916, and from July, 1916, to July, 1917, 162 companies placed their names on the subscription lists. Of these, forty-three cancelled their orders either during this period or at its close for reasons varying from financial stress to the closing out of their appliance business. All renewals were accepted to November, 1917, and from July to November 119 companies received the service.

A questionnaire sent to all subscribers to the service brought in nineteen replies. Although this is too small a number on which to base any generalizations, it was interesting to note (1) the variety in sizes of windows used by gas companies, a fact which make the providing of a thoroughly satisfactory trimming service very difficult; (2) the small funds available for building displays (from almost nothing to $100 or $120 per year); (3) the few properties on hand, although the encouraging note here is the fact that companies which formerly possessed almost nothing are now accumulating useful properties; and (4) the suggestions and commendations elicited by the letter. The whole idea of the service, we believe, was summed up by the San Francisco company, with whose remarks we will close this report. "The National Commercial Gas Association service proves of great value to us in our work; its excellence lies in its good suggestions, and even better is the fact that it serves for our men as a monthly reminder of the value of window display work."

News of the Gas Industry

Indianapolis Faces Serious Gas Shortage

Congested Railroads Hold-Up Gas Oil and Emergency Materials

Indianapolis during the middle of January faced the most severe gas shortage situation in its history. Various towns and cities throughout the State of Indiana also suffered, and in some instances smaller plants were forced to close down because of the coal shortage conditions and the tremendous demands on the gas companies, not only for cooking and lighting purposes, but for heating purposes, as an adjunct to the inadequate coal supply.

Regardless of the continued warning of officials and gas company managers, persons insisted, in many instances, in continuing to use gas grates and gas stoves for heating. In some instances they did this because of the fact that gas in their respective communities was cheaper than the now high-priced coal. The inflexibility of State regulation of utility properties was brought out very clearly in Indiana this year in such instances, although the public service commission worked overtime to give relief to utilities in every instance where reasonable rate-increase demands were shown to be backed up by indisputable figures as to the cost of operation.

The sudden jump of coal prices, however, and the big increases in costs of other materials could not be met by completely reasonable adjustment of rates throughout the State, apparently. At least, many of the petitions of the big gas companies were either withdrawn from before the commission, or, when relief was granted, it was found that swiftly rising prices on coal and other gas-making materials quickly brought the relieved companies face to face again with financial loss. During the period of the war, if price fluctuations continue as rapidly as heretofore in Indiana, it would seem almost imperative that some scheme of automatic relief to the gas companies must be worked out.

The gas situation in Indianapolis became acute early in January, although it did not become dangerous until the middle of the month. The 14th of the month industrial concerns were cut off from the supply of gas, and many uptown buildings were eliminated from the list of those consumers to whom the company undertook to supply its modicum of gas.

A shipment of gas oil was rushed from Alton, Ill., in an effort to force enough emergency gas into the mains of the Citizens Gas Company to insure operation of the plant until the terrifically cold weather of middle January had passed. When this dispatch was written, Jan. 15, it was not known whether it would be possible to save the city of Indianapolis from a complete gasless period. The company officials feared that it would be at least thirty days from the time all gas was exhausted in the mains to the time when service could be re-established, because of the difficulty in forcing gas through the air-laden mains, in case the supply therein would be exhausted.

Newspaper typesetting machines were cut off from the use of gas and Prest-O-Lite tanks were used in many instances to heat the linotype metal. The special train, hauling ten carloads of emergency gas oil and other emergency materials, was being rushed to the city with all possible speed, but railroad congestion, it was feared, would prevent its arrival in time to save the situation. Coke gas ovens at the various plants controlled by the Citizens Gas Company were pushed to their capacity by the unusually heavy drain on the gas service. On Jan. 15 officials of the company announced that by strictest economy the company would be able to supply gas for the ensuing twenty-four hours.

(*Continued on page* 66)

5 Day Industrial Shut-Down Followed by 9 Idle Mondays Ordered by Administration for Conservation of Coal

Drastic Action Startles Country, But is Necessary—Effective East of Mississippi and in Minnesota and Louisiana

After the approval by President Wilson of the details of the revolutionary order laid before him by H. A. Garfield, Fuel Administrator, it went into effect Jan. 18. "There was no other way," states Garfield and asks "patriotic co-operation."

Following is the statement issued by the Government regarding the order for fuel conservation:

The order of the United States Fuel Administrator directing the curtailment in consumption of fuel provides substantially as follows:

(1) Until further order of the United States Fuel Administrator, all persons selling fuel in whatever capacity shall give preference to orders for necessary requirements:

(A) Of railroads:

(B) Of domestic consumers, hospitals, charitable institutions and army and navy cantonments:

(C) Of public utilities, telephones and telegraph plants;

(D) Of ships and vessels for bunker purposes;

(E) Of the United States for strictly governmental purposes, not including orders from or for factories or plants working on contracts for the United States;

(F) Of municipal, county, or State governments for necessary public uses;

(G) Of manufacturers of perishable food or of food for necessary immediate consumption.

The order further provides that on Jan. 18, 19, 20, 21 and 22, 1918, no fuel shall be delivered to any person, firm, association or corporation for any uses or requirements not included in the foregoing list until the requirements included in the list shall have been first delivered.

On Jan. 18, 19, 20, 21 and 22, 1918, and also on each and every Monday, beginning Jan. 28, 1918, and continuing up to and including March 25, 1918, no manufacturing plant shall burn fuel or use power derived from fuel for any purpose except:

(A) Such plants as from their nature must be continuously operated seven days each week to avoid serious injury to the plant itself or its contents.

(B) Manufacturers of perishable foods.

(C) Manufacturers of food not perishable and not in immediate demand, who may burn fuel to such extent as is authorized by the Fuel Administrator of the State in which such plant is located or by his representatives authorized therefor, upon application by the United States Food Administrator.

(D) Printers or publishers of daily papers may burn fuel as usual excepting on every Monday from Jan. 21 to March 25, 1918, inclusive, on which days they may burn fuel to such extent as is necessary to issue such editions as such papers customarily issue on important national legal holidays, and where such papers do not issue any editions on a holiday they are permitted to issue one edition on the said Mondays.

(E) Printing establishments which may burn fuel on Jan. 18, 19, 20 and 22 to such extent as is necessary to issue current numbers of magazines and other publications periodically issued.

On each Monday, beginning Jan. 21, 1918, and continuing up and including Monday, March 25, 1918, no fuel shall be burned (except to such extent as is essential to prevent injury to property from freezing) for the purpose of supplying heat for:

(A) Any business or professional offices, except offices used by the United States, State, county, or municipal governments, transportation companies, or which are occupied by banks and trust companies or by physicians or dentists;

(B) Wholesale or retail stores, or any other stores, business houses, or buildings whatever, except that for the purpose of selling food only, for which purposes stores may maintain necessary heat until 12 o'clock noon; and for the purpose of selling drugs and medical supplies only, stores may maintain necessary heat throughout the day and evening;

(C) Theaters, moving picture houses, bowling alleys, billiard rooms, private or public dance halls, or any other place of amusement.

On the above specified Mondays no fuel shall be burned for the purpose of heating rooms or buildings in which liquor is sold on those days.

No fuel shall be burned on any of the foregoing specified Mondays for the purpose of supplying power for the movement of surface, elevated, subway or suburban cars or trains in excess of the amount used on the Sundays previous thereto.

The order provides that nothing in this order shall be held to forbid the burning of fuel to heat rooms or such portions of buildings as are used in connection with the production or distribution of fuel.

The State Fuel Administrators are authorized by the order to issue orders on special applications for relief, where necessary, to prevent injury to health or destruction of or injury to property by fire or freezing.

The order is effective in all of the territory of the United States east of the Mississippi River, including the whole of the States of Louisiana and Minnesota.

Indianapolis Gas Company Faces Gas Shortage

(*Continued from page* 65)

The gas company issued a public warning that burners, tips and gas lights should not be left burning when persons were sleeping in their homes, "as the service may be discontinued at any time." As soon as the service was discontinued it was urged that all openings be turned off at once, including lights, of course.

In one formal advertisement to the public the company said:

"The present heavy demand for gas and the shortage of output will probably continue for several days. The railroad blockades are preventing us from getting gas oil, without which we cannot keep up our production. Every effort is being made by the railroads to bring in the oil cars, but we can get no definite advice as to the time of arrival.

"We are making every effort to safeguard the gas supply of the city. Industries were compelled to discontinue the use of gas Saturday. Only with the closest economy of use can we keep the mains filled during the next twenty-four hours with the stock of oil on hand.

"If gas goes out, be sure that all burners are shut off. If any burner will not light, be sure to turn it off before leaving it. Do not keep any burner lighted unless some one is in the room. If you smell gas, shut off all burners, and never search for a leak with a match or candle."

St. Joseph, Mo., Company Uses 87.3 Per Cent Artificial Gas in December

The rate for gas for the month of December, bills for which were issued recently by the St. Joseph (Mo.) Gas Company, was 95 cents net. The rate was figured and based on a total consumption of 62,330,000 cu. ft., of which 54,382,000 cu. ft., or 87.3 per cent was manufactured, and only 7,951,000 cu. ft. was natural. Only two days during the month passed without the manufacture of gas.

Price of Coke at New Haven Increased to 75 Cents

An increase in coke prices from $7.75 to $8.50 for 50 bushels, bagged and binned, has been made by the New Haven (Conn.) Gas Light Company.

Recently the Government Fuel Administration announced that there would be no revision of coke prices and this was commented upon at New Haven recently, but gas company officials explained that this order in no way applied to this commonly consumed coke, but to by-product and oven coke. The price of coke such as is handled at New Haven depends on the price of coal. It was explained, and when the anthracite price was fixed at $10.15 an increase in the coke price was a logical result.

Canton, Ill., Company Now Settled in Its New Quarters

The Canton (Ill.) Gas & Electric Company now occupies its fine new office building on the southeast corner of Elm Street and First Avenue, which has been wholly overhauled and remodeled for its use. The removal was made the beginning of the month. The new offices are splendidly equipped and conveniently arranged, and the interior fittings and decorations are handsome and appropriate.

THE PACIFIC GAS & ELECTRIC COMPANY has passed the quarterly dividend of $1.25 a share on the common stock. A representative of the company stated that the passing of the dividend was due to a desire on the part of the company to conserve its resources.

Reserve Supply Saves Allentown-Bethlehem Output During Zero Spell

Gas Consumption Reaches 3,089,000 Cu. Ft. While Capacity is But 2,300,000

Coal shortage and heating plants not calculated to withstand the long protracted cold spell with which the city is now suffering had their effect on gas consumption in Allentown during the past few weeks, increasing the consumption of gas by as much as 60 per cent in one day—Monday, Dec. 31, 1917—over the same day a year ago.

John A. Frick, superintendent of the Allentown-Bethlehem Gas Company, stated that the demands made on the gas supply were entirely unprecedented and unexpected, and that but for the exceptional reserve capacity of the plant would have swamped the plant. As it is, the consumption on Monday reached 3,089,000 cu. ft., while the capacity of the three plants in the system is but 2,300,000, including the Allentown, Bethlehem and Catasauqua plants.

"There was plenty of gas," he stated, "and, barring accident, there will continue to be plenty to take care of all requirements." Many of the mains in older portions of the city, however, were laid at a time when the large demand for gas for heating purposes was not anticipated, with the result that areas served by these mains are naturally having lower pressure than would be the case otherwise.

People used every available gas-heating stove, many lighted the ovens of the gas ranges, while still others utilized the gas-light burners for heating—although the last-named method produced almost no heat and did no good.

Plans have been made and contracts already let for the installation of equipment which will double the capacity of the Allentown plant, and work on these contracts will be begun in spring. The Bethlehem plant, with a capacity of 600,000 cu. ft., and the Catasauqua plant, with 100,000 cu. ft. capacity, will remain as they are, but the local plant, which is drawn upon not only for Allentown and adjacent territory, but is used also to supply the Bethlehem and Catasauqua territory, will be increased to a capacity of 3,500,000 ft. daily.

Massachusetts Commission Recommends Repeal of Candle Power Standard

The immediate repeal of the candle-power standard for gas is recommended to the Legislature by the gas and electric light commission in their annual report.

This action is required, the commission says, by the imperative need for toluol for high explosives and the necessity of gas companies recovering as much of this material from their gas as possible.

The commission also renewed its request that the managers of municipal plants be placed under the civil service. It recommends that its approval be required for contracts for purchase and sale of gas and electricity between companies having common ownership.

Emergency connections between gas and electric companies in consequence of the coal shortage, and the shutting down of such power plants and gas works as may be unnecessary, as well as the conservation of steam power, is also recommended.

Baltimore Company with Part of Its Coke Oven Supply Cut Off Meets Abnormal Demand

A record output of 29,000,000 cu. ft. of gas in twenty-four hours was made by the Consolidated Gas Electric Light & Power Company Monday, Dec. 31, 1917. This is the greatest amount of gas the company has made and issued to consumers for any one day of twenty-four hours in its history. Obviously the prevailing unusual demand for gas was the reason for the extraordinary consumption. In many homes and in some plants where coal cannot be secured resort has been had to gas for light and power and heat, which normally would not be used. That is one reason for the record output, although, aside from the demand due to the severe weather and the coal shortage, the company's output has been greater than any previous year because of greatly increasing business.

In connection with this record output it should be said that the Consolidated manufactured 25,000,000 cu. ft. thereof, only 4,000,000 cu. ft. coming from the Bethlehem Steel Company's coke ovens. Normally 9,000,000 cu. ft. are received daily from Sparrows Point, but, due to the lack of coal there, the supply of coke-oven gas has been diminished, owing to shutting down of many of the coke ovens. Another big factor in this record output is the ability of the Consolidated to meet the emergency by making gas when its supply from Sparrows Point is short. The Consolidated brought into use old machinery which had not been in use for years because of lack of necessity therefor, and has been able to rise to the emergency.

Higher Rates Asked at Bridgeton, N. J.

The State board further says in its notice to the city that the company claims "that such a rate would be reasonable for it to charge."

The Bridgeton Gas Light Company has applied to the Board of Public Utility Commissioners of the State of New Jersey for power to increase their rate for supplying gas from $1 per thousand cubic feet, as it is now, to $1.25, "without discount or rebate either for cash or for quantity consumed."

The city of Bridgeton was notified of this by the board recently, and at the same time that a public hearing upon the application was to be held at the State House, Trenton, on Monday, Dec. 31, at 11 o'clock, when all persons interested would be heard.

Blackstone Valley Company Increases Rates

An increase of 15 cents per 1,000 ft. for gas in the cities of Pawtucket, Woonsocket and Central Falls and the towns of Cumberland and Lincoln has been ordered by the Blackstone Valley Gas & Electric Company.

Notice of the change was given recently by the company to the cities and towns involved and to the public utilities commission. The new schedule is due to become effective in thirty days.

Increased costs of coal and oil are given as the causes of the advances, which are declared to be only temporary. When conditions permit, the company's statement says, rates will be reduced to the old figure.

Coal and Coke Report as Issued by Geological Survey

Parts of the weekly report on the production of bituminous coal and the causes of loss of working time, compiled by the Geological Survey, Department of the Interior, Jan. 12, 1918.

During the five working days of Christmas week, the mines reporting produced 4,861,641 net tons, or 75.8 per cent of their full-time capacity. Allowing for the Christmas holiday, it will be seen that the ratio of tonnage produced to full-time capacity has returned to the level maintained before the severe weather of mid-December. Losses attributed to lack of cars amounted to 8.8 per cent; those due to labor shortage and strikes, to 10.2 per cent; and those due to mine disability, 3.8 per cent. The striking increase in the per cent of loss attributed to labor shortage, from 2.6 per cent during the week of December 22 to 10.2 per cent in Christmas week, was caused by widespread observance as holidays of the days before and after Christmas. Since fewer men reported for work during the week, the railroads' task of carrying away coal brought to the mine mouth was lightened, with the result that losses attributed to lack of cars fell from 24.7 to 8.8 per cent of the present capacity.

From all States except southwest Virginia, Alabama, Iowa, Arkansas and West Virginia Panhandle, improved working conditions were reported. In each of these States an increase in losses due to labor shortage was responsible for the decline in output. In southwestern Virginia and Alabama the ratio of tonnage produced to capacity was the lowest on record since the weekly bulletins were begun. Losses attributed to labor shortage in southwest Virginia were 24.1 per cent and in Alabama 23.6 per cent.

A general improvement in working conditions was reported from Illinois, Indiana, Ohio and Pennsylvania. West Virginia, both high and low volatile, which had suffered from the bad weather longer than other districts, showed a marked improvement during Christmas week. The most striking improvement was reported from eastern Kentucky. Losses in the Hazard field dropped from 63.1 to 19.3 per cent of the full-time capacity, and in northeastern Kentucky from 62.5 to 32.0 per cent.

Beehive Coke

Representative operators in the beehive coke regions of Connellsville, Greensburg and Latrobe, Pa., reported a production of 217,490 net tons of coke during the week ended Jan. 5, or 53 per cent of their full-time capacity as rated by the railroads. Losses due to shortage of yard labor amounted to 15.6 per cent of the rated capacity, a figure substantially identical with that reported for Christmas week. Losses due to lack of coke cars rose from 16.3 to 27.1 per cent.

The same operators shipped 110,900 tons of coal.

By-product Coke

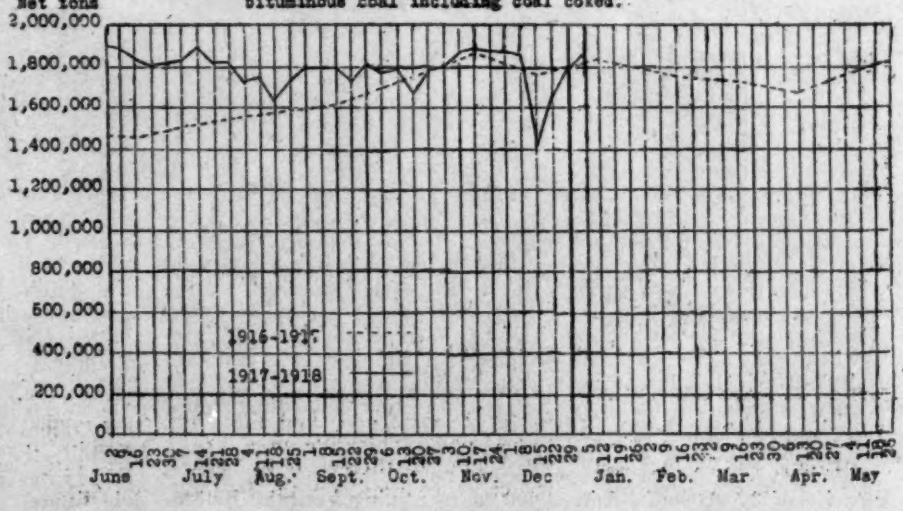
Forty-eight by-product coke plants charted produced during a seven-day period in late December 80.4 per cent of their maximum capacity. The loss of 19.6 per cent affects not only the output of munition steel, but of benzol and toluol and ammonia as well, which are the bases of modern high explosives.

The forty-one plants reporting causes of loss produced 338,482 tons of coke from 468,154 tons of coal charged, a recovery of 72 per cent. The production, however, amounted to only 82.4 per cent of the maximum capacity, defined as "the maximum quantity of coke of the grade desired by the operator which can be produced when all conditions are favorable with all ovens active." The plants reporting thus failed to realize in actual output 17.6 per cent of their maximum capacity. The dominant factor limiting production was reported to be lack of coal. Losses attributed to this cause amounted to 13.8 per cent of the maximum capacity. Losses due to labor shortage and strikes were insignificant, constituting but 0.2 per cent. A certain loss due to necessary repairs may be considered as unavoidable, yet for all plants reporting the output lost for this cause amounted to only 1.6 per cent. The loss of 2.1 per cent attributed to "all other causes" was largely the consequence of the low grade of coal used by plants unable to secure fuel of the quality desired.

It was reported that in certain States the coal shortage was much more acute than in others. Plants in Indiana lost 26.8 per cent of their potential output through lack of coal. Illinois, though less severely affected, lost 13.6 per cent of its full capacity from the same cause. New Jersey, New York and Ohio all suffered losses in excess of 20 per cent of their capacity.

The Standard Gas Light Company, of the city of New York, a subsidiary of the Consolidated Gas Company, has passed both the semi-annual dividends due at this time on the common and preferred stocks.

Estimated average total production per working day of bituminous coal including coal coked.



Laurium, Mich. Council Grants Permission to Increase Rates

The Laurium village council, at its recent meeting, granted permission to the Calumet Gas Company, serving Laurium and Red Jacket, Mich., to increase its rates to $1.60 per thousand cubic feet. The new rates, it is understood, will continue in effect while the present prices for coal and other commodities remain at present levels.

Earnings Statement of Massachusetts Gas Companies Shows Increase of 8.47 Per Cent

The combined net earnings available for dividends of the subsidiary companies of the Massachusetts Gas Companies for November were $408,494, an increase of $31,912, or 8.47 per cent, compared with the corresponding month a year ago.

November earnings compare as below:

Gas Department—	1917	1916	1915
Boston	$117,344	$131,537	$133,696
East Boston	1,709	3,379	6,452
Quincy	4,678	3,032	1,617
Newton	9,610	8,728	8,977
Totals	$133,353	$146,679	$150,744
Coal Department—			
New England Gas & Coke	.....	$91,332	$10,618
New England Coal & Coke	$20,163	88,194	40,445
Federal Coal	.....	50,506	5,843
Boston Tow Boat	.....	*129	4,247
New England Fuel & Trans.	254,977	.....	.....
Totals	$275,141	$229,903	$121,154
Grand totals	$408,494	$376,582	$271,898

The net earnings for the five months ended Nov. 30, compare as follows:

Gas Department—	1917	1916	1915
Boston	$503,226	$543,460	$488,676
East Boston	21,693	23,045	30,121
Quincy	28,915	22,794	22,551
Newton	37,683	37,468	35,858
Totals	$591,518	$626,769	$577,208
Coal Department—			
New England Gas & Coke	.....	$305,466	$222,732
New England Coal & Coke	$90,875	318,455	237,717
Federal Coal	.....	109,410	27,720
Boston Tow Boat	.....	13,686	12,203
New England Fuel & Trans.	1,611,142	.....	.....
Totals	$1,702,018	$747,018	$500,374
Grand totals	$2,293,537	$1,373,788	$1,077,582

*Deficit.

Waterville, Me., Company's New Rates Effective Feb. 4

The Kennebec Gas & Fuel Company, of Waterville, Me., recently filed a new schedule of gas rate with the public utilities commission to be effective Feb. 4, 1918, which is an increase of 40 cents per 1,000 cu. ft. for gas.

Under the new rate for the first 3,000 cu. ft. the price will be $1.90 per thousand; for the second 3,000 cu. ft., $1.80 per 1,000; for the third 3,000 cu. ft., $1.70 per 1,000; for the fourth 3,000 cu. ft., $1.55 per 1,000; for the fifth 3,000 cu. ft., $1.40 per 1,000, and for the sixth 3,000 cu. ft. and above, $1 per 1,000. The monthly minimum rate under the new schedule is increased from 50 to 75 cents.

The new schedule also contains a provision at present in effect providing that if bills are not paid within ten days an additional charge of 10 cents per 1,000 cu. ft. will be made.

Rates Increased at Rutland, Vt.

An announcement of particular interest to Rutland people was made by the gas department of the Rutland (Vt.) Railway, Light & Power Company, to the effect that the price of gas would be increased.

Notice of the increase in rates, to take effect Jan. 15, have been posted in the offices of the company. The following will be the rates on and after the 15th: First 10,000 cu. ft., $1.65 a thousand; 10,000 to 20,000 cu. ft., $1.60 a thousand; 20,000 to 50,000 ft., $1.45 a thousand; 50,000 to 150,000 ft., $1.20 a thousand; all gas used in excess of 150,000 cu. ft., $1.05 a thousand.

A discount of 5 per cent is given on bills paid before the 15th of the month. The minimum monthly bill will be 50 cents.

1500 Tons of Coal Destined for Cambridge Lost at Sea

The seriousness of the coal situation in Cambridge, Mass., was augmented recently by word received by Chairman Elmer H. Bright, of the local fuel committee, that the coal barge with 1,500 tons of coal that was lost at sea Jan. 5 contained coal that was destined for Cambridge. To add to this was word from the Cambridge Gas Light Company that because of the large amount of gas consumed in Cambridge during the past two weeks, the gas company had found it necessary to resort to manufacturing water gas, made from coke.

For the past several weeks the gas company has relieved to a large extent the coal situation in the University City by the sale of quantities of coke. If the Cambridge company is forced to continue the making of water gas it means that it will have little or no more coke to sell.

Foundation for Boiler House at Webster, Mass., Completed

The foundation has been completed for the addition to the boiler house for the Webster & Southbridge Gas & Electric Light Company at Webster, Mass. It will be of brick construction with reinforced concrete roof, 12 x 60 ft., one story high. The work is being done by the day.

Rate to Go Up at Pawtucket, R. I.

The Blackstone Valley Gas & Electric Company, in a communication to the city government, declared that increases in the costs of materials purchased by the company and used to produce gas and electric power have made it necessary for the increasing of the rates charged the consumers in Pawtucket. It is planned to increase the rate charged for gas 15 cents a thousand feet.

The communication, which was received by the board of aldermen at the meeting, follows:

"Since Jan. 1, 1916, very heavy advances have occurred in the prices of coal and oil and in wages for all kinds of labor.

"The most important materials purchased by this company are the following: Steam coal, gas coal, gas oil. The increases referred to in the cost of these materials to this company are as follows:

"Steam coal, delivered in Pawtucket—Average cost in 1916, $3.77 per gross ton; average cost in 1917, $5.08 per gross ton; probable average cost in 1918, $7.56 per gross ton.

"In Woonsocket—Average cost in 1916, $4.25 per gross ton; average cost in 1917, $5.40 per gross ton; probable average cost in 1918, $9.10 per gross ton.

"Gas coal, delivered in Pawtucket—Average cost in 1916, $3.17 per gross ton; average cost in 1917, $6.07 per gross ton; probable average cost in 1918, $7.62 per gross ton.

"Gas oil, delivered in Pawtucket—Average cost in 1916, 3.16 cents per gallon; average cost in 1917, 4.75 cents per gallon; average cost in 1918, 7.78 cents per gallon.

"It will be seen from the above that the prices for both coal and oil have increased since 1916 more than 100 per cent.

"This company made favorable contracts for gas oil which continued until the summer of 1917, and for steam coal, which latter contract is about to expire.

"It was necessary to buy about one-half of the oil and all of the gas coal required in 1917 at market prices.

"Up to this time no increase has been made in rates of gas.

"The consumers having either gas or electric service have been given the whole benefit of the favorable contracts for steam coal and oil referred to.

"As a consequence, although this company for the present year had an increase in gross earnings of more than $200,000, as compared with the earnings of the previous year, the net earnings showed a decrease of more than $100,000.

"The conditions in 1918 will be so much more serious than those of the past year that increases in rates both for gas and electricity must now be made.

"This company will require for its use in 1918 50,000 tons of steam coal, 20,000 tons of gas coal and 1,625,000 gallons of gas oil.

"In 1918 the portion of the increase in the company's operating expenses (as compared with those of 1916), due solely to the advance in prices of materials, labor and taxes, will be as follows:

Gas Department—The increased price for this coal, as compared with the price of 1916, will be approximately $75,000; the increased price of the gas oil needed (1,625,000 gallons), will be approximately $75,000; wages to be paid in 1918 will exceed those paid in 1916 by $40,000, and there will be an increase in taxes of approximately $25,000; total, $215,000."

War Charge to be Added to Bills in Sioux Falls, S. D., During Period of Abnormal Prices

The Sioux Falls (S. D.) Gas Company has recently announced that a war charge would be added to the monthly gas bills, giving as their reason the high prices of raw materials entering into the manufacture and distribution of gas.

Not desiring, however, to disturb the existing rate schedule, which it thinks, based on normal prices, is equitable to consumer and company alike, a fair solution of the problem is to establish a "war charge," to be added to the consumers' bills each month, this charge to continue only during the period of abnormal prices and to be removed when conditions again become normal.

The "war charge" will be 20 per cent of the net bills for each consumer and will be added to the monthly bills rendered after Jan. 1, 1918.

Increase Requested by Haverhill Company

The Haverhill (Mass.) Gas Light Company has petitioned the State gas and electric light commissioners to permit an increase in the price of gas in Haverhill of 15 cents per 1,000 cu. ft., making the net price for gas 95 cents per thousand, temporarily.

The company asserts that such action is necessary to meet the abnormal operating costs due to war conditions. The most important factors mentioned are the advances in the cost of gas oil and generator fuel. The increase is desired only during the present situation caused by the war.

Commission Upholds Rate Increase

The public service commission, second district, recently handed down its decision on the complaints filed by the village of South Glens Falls, Hudson Falls and Fort Edward against the United Gas, Electric Light & Fuel Company for raising the price of gas from $1.25 per thousand cubic feet to $1.60 per thousand cubic feet, dismissing the complaints and holding that the ground of the complaints, that the franchises given by the various villages provide that the price of gas should never be raised to more than $1.25, was not tenable.

Increase Asked by Addison, N. Y., Company

Public Service Commissioner J. C. Irvine held a hearing in the City Court room of the City Hall recently on the application of the Addison (N. Y.) Gas & Power Company for permission to increase the rate to consumers from 40 cents net to 50 cents net per 1,000 ft. The attorneys for the Addison gas company claim that at the old rate they were never able to pay even a 3 per cent dividend on their capital invested stock, and that as the Potter Gas Company, from which company they purchase gas, has recently raised the rate for natural gas, that the company will be compelled to do business at a loss unless the rate is raised to 50 cents net per 1,000 ft. Judge Irvine reserved decision in this case.

A Correction

The address of the Stacey Manufacturing Company was given as Cleveland, Ohio, in an item appearing on page 16 of the advertising section of the Jan. 5 issue of this JOURNAL. This should have been Cincinnati, Ohio.

Societies and Associations

THE PACIFIC COAST GAS ASSOCIATION held their first meeting of the 1918 board of directors on Dec. 17 for the purpose of outlining the association's activities for the coming year, at which meeting the following committees were appointed: Wrinkle Department—W. M. Henderson, editor, Pacific Gas & Electric Company, San Francisco, Cal.; Experience Department—John Clements, editor, Pacific Gas & Electric Company, Oakland, Cal.; Publicity Department—F. S. Myrtle, editor, Pacific Gas & Electric Company, San Francisco, Cal.; Library—E. C. Jones, librarian, J. P. Baloun, assistant librarian, Pacific Gas & Electric Company, San Francisco, Cal.; Gas Engineering Degree Committee—John A. Britton, chairman, Pacific Gas & Electric Company, San Francisco, Cal.; Gas Exhibits Committee—B. S. Pedersen, chairman, Geo. M. Clark & Company Division, San Francisco, Cal.; Membership Committee—A. B. Day, chairman, Los Angeles Gas & Electric Corporation, Los Angeles, Cal.; Legislation and Taxation Committee—F. S. Wade, chairman, Southern Counties Gas Company, Los Angeles, Cal.; Public Policy Committee—W. B. Cline, chairman, Los Angeles Gas & Electric Corporation, Los Angeles, Cal.; Committee of Piping of Buildings for Gas—Geo. P. Egleston, chairman, Coast Counties Gas & Electric Company, San Francisco, Cal.; Committee on Papers and Meetings—L. B. Jones, chairman, Pacific Gas & Electric Company, San Francisco, Cal.; Entertainment and Reception Committee—Van E. Britton, chairman, Pacific Gas & Electric Company, San Francisco, Cal.; Committee on Technical Information—E. C. Jones, chairman, Pacific Gas & Electric Company, San Francisco, Cal. Membership in the association is confined to active officers or employees of companies engaged in the manufacture, generation or sale of gas, or in the manufacture or sale of apparatus or appliances used in the gas industry, and includes all such companies on the Pacific Coast. The association holds a three-day convention each year, at which technical papers relating to all branches of the gas industry are read, and the experience of the different members during the year are recited and discussed. This, naturally, is of great value to the public at large, resulting, as it does, in improvements in the particular service represented by the members of the association. The next convention is to be held at Los Angeles in September, 1918, and in the interim two "get-together" dinners are to be given—the first one at Los Angeles on Saturday, evening, Feb. 16, and the second one at San Francisco on Saturday evening, June 18, 1918. These "get-together" dinners are an innovation designed to bring the members in closer personal touch than is possible at the annual convention. The following officers were elected for the ensuing year: John D. Kuster, president, Pacific Gas & Electric Company, San Jose, Cal.; A. B. Day, vice-president, Los Angeles Gas & Electric Corporation, Los Angeles; Henry Bostwick, secretary-treasurer, Pacific Gas & Electric Company, San Francisco. The following are the directors elected: John A. Britton, Pacific Gas & Electric Company, San Francisco; Geo. P. Egleston, Coast Counties Gas & Electric Company, San Francisco; B. S. Pedersen, Geo. M. Clark & Company Division, San Francisco; D. J. Young, San Diego Consolidated Gas & Electric Company, San Diego, Cal.; S. C. Bratton, Portland Gas & Coke Company, Portland, Ore.; Leon B. Jones, Pacific Gas & Electric Company, San Francisco; F. S. Wade, Southern Counties Gas Company, Los Angeles, Cal.

THE OLD COLONY GAS COMPANY employees held their regular monthly meeting on Friday evening, Dec. 21, 1917, with an extra large attendance of employees and guests. The meeting was opened with a short speech from R. Gardner, presiding chairman of the evening, after which a play entitled "Pickles, Bonbons and Temper" was presented to the enjoyment of all. After the play Thomas McCarthy gave a very interesting talk on "Diplomacy, Courtesy and Petty Jealousy," which was discussed by several employees. Christmas gifts were then distributed. Accompanying each gift was a short rhyme, which was read by each one as he received his gift. This proved to be very amusing and caused a great deal of fun and laughter. Refreshments were served and singing and dancing enjoyed by all, making the meeting a great success.

THE LINDSAY LIGHT COMPANY, of Chicago, at a directors' meeting on Jan. 7 increased the regular quarterly dividend on the common stock from 3 per cent to 5 per cent, and at the same time provided an extra disbursement of 15 per cent on that issue. The regular quarterly dividend of 1¾ per cent was declared on the preferred stock. All these dividends are payable Feb. 28 to stockholders of record on Feb. 3. The Lindsay Light Company is understood to have enjoyed great prosperity in recent years, and this has been reflected in the steady expansion of the company. In the fiscal year ending May 31, last, the net profits of the company were announced as $431,003 and the surplus was $307,003, both these figures being double those of the preceding twelve months.

THE PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS in an announcement issued at Chicago says it expects to be able to report soon that its gross income for 1917 was approximately $1,000,000 greater than that of 1916. The company during the last year gave gas service to 66,000 customers, compared to 61,134 in 1916 and 56,743 in 1915. It now serves thirteen counties in the northeastern part of Illinois, including 165 cities and villages.

Personal Notes

SAMUEL SNYDER, who has been an employee of the United Natural Gas Company, of Sharon, Pa., and its predecessor companies for the past thirty-four years, thirty-one years of which service have been in Sharon, has retired. He was tendered a banquet at the Shenango House New Year's eve, at which time he was presented with a handsome leather upholstered

easy chair. The presentation speech was made by Toastmaster John P. Curry, manager of the Sharon district, and in turn Mr. Snyder responded and expressed his appreciation and deep interest in all things that pertained to the company, its employees, and especially those who have been his associates and friends in Sharon. Among those present was Peter L. Curry, an old-time gas man, father of John P. Curry. He told many interesting things of the old days. Talks were given by every one of the twenty-six employees of the company who were present. Mr. Snyder has not decided on his future plans as yet.

EDWIN W. WIGHTMAN, chief collector for the Waterbury (Mass.) Gas Light Company, died recently at the age of forty-six. For twenty-one years he had resided in Waterbury, and for nine years was a member of the Waterville school district. He was also a member of the Odd Fellows.

THOMAS H. HINTZE, who for the past ten years was connected with the Providence (R. I.) Gas Company as superintendent of manufacture, resigned, as was noted in the Jan. 5 number of the AMERICAN GAS ENGINEERING JOURNAL, and on Jan. 14 assumed charge of the Calf Pastures station of the Boston Consolidated Gas Company.

O. A. MERCHANT, manager of the Bangor (Me.) Gas Light Company, has received an offer to accept the general managership of the Chuctanunda Gas Light Company, of Amsterdam, N. Y., which he has accepted. He will be succeeded by George M. Dolley. Mr. Merchant has been manager of the Bangor company since November, 1913. He has been active in Chamber of Commerce affairs, having been chairman of the membership committee and a director of the local organization. He is a charter member of the Bangor Rotary Club, a member of the Madocawando and Conduskeag Canoe and Country Clubs, and of Conduskeag Lodge, Knights of Pythias. Mr. Merchant started with the American Gas Company in Kingston, N. Y., twenty years ago, as an office boy, soon winning promotion to the various departments. In March, 1906, he was sent to the Cape May (N. J.) Illuminating Company as manager, where he served five years. From there he went to Coatesville, Pa., as manager of the Philadelphia Suburban Gas & Electric Company, remaining in that place two and a half years. He then went to Bangor, which place he expects to leave Feb. 1.

GEORGE M. DOLLEY has been elected manager of the Bangor (Me.) Gas Light Company. Mr. Dolley began his career in the gas business at the Bangor plant. He left Bangor about 1906 to take a position with the Peru branch of the American Gas Company, and is now well located in Logansport. He has been president of the Indiana Gas Association.

ROBERT C. COFFY, for the past three years manager of the Everett (Wash.) Gas Company, will leave shortly for Sapulpa, Okla., where he will manage the electric plant owned by the H. M. Byllesby Company.

JOHN B. MCDANIEL, of Arkadelphia, Ark., has been appointed a gas and oil inspector for Arkansas by Governor Brough, to fill the vacancy caused by the resignation of J. Monroe Smith.

M. L. KANE, formerly with the United Gas Improvement Company, of Philadelphia, and its associated plants, and recently general manager and engineer of the Canadian properties of the Continental Gas & Electric Corporation, of Cleveland, Ohio, has accepted the position as manager of the gas department of the Winnipeg (Man.) Electric Railway Company.

J. MONROE SMITH, of Eldorado, Ark., recently retired from official life when his resignation as an oil and gas inspector was accepted by Governor Brough. He is seventy-two years old, and asked to be relieved because of poor health. He is a Confederate veteran and has a record in public life which dates back to the days of the Civil War. He served in the Confederate army during the entire war. He was for twelve years sheriff of Union County and was clerk of that county for six years. Then he went to the legislature, where he served eight years in each house. Last April he was appointed an oil and gas inspector under Charles F. Martin, chief inspector.

WILLIAM A. ROBINSON, of Clinton, Mass., has been appointed assistant business manager of the Daytona (Fla.) Gas Company, and assumed his new duties Jan. 15. He was formerly with the Spencer (Mass.) Gas Company. Before leaving Spencer Mr. Robinson was presented with a beautiful wrist watch by several of his friends. He is succeeded by William Fox.

WILLIAM FOX, of Clinton, Mass., has been appointed to fill the position in the office of the Spencer (Mass.) Gas Company, caused by the resignation of William A. Robinson.

GEORGE FULLERTON, of New Britain, Conn., has been appointed manager for the Albion (Mich.) Gas Light Company and assumed his new duties Jan. 1. He succeeds George W. Briggs.

GEORGE W. BRIGGS, formerly manager for the Albion (Mich.) Gas Light Company, has recently been transferred to Winona, Minn., and is now with the Wisconsin-Minnesota Light & Power Company.

JUDGE B. A. HOUGH, who was for many years a director on the board of the Danbury (Conn.) & Bethel Gas & Electric Light Company, died recently. The offices of the company were closed between 3 and 4 o'clock on the afternoon of Jan. 4 as a token of respect for the late judge.

PETER J. WALL, who has been connected with the Northern Indiana Gas & Electric Company's sales force at Lafayette, Ind., for several months, has been appointed assistant street commissioner. He was county commissioner previous to taking the position with the gas company.

L. E. CALDWELL, who for the last five years has been manager of the Iowa City Light & Power Company, operating the gas and electric plants at Iowa City, Iowa, has resigned to accept a position with the Wisconsin-Minnesota Light & Power Company as general manager of the gas, electric and heating plants at La Crosse, Wis. Mr. Caldwell assumed his new duties Jan. 15.

MALCOLM ALEXANDER, formerly superintendent of the old Brooklyn Union Gas Company, eighty-eight years old, died of infirmities of age Jan. 11 at the home of his daughter, Mrs. Grace Parkin, of No. 721 Sterling Place, Brooklyn.

RITER-CONLEY COMPANY

STEEL CONSTRUCTION

PITTSBURGH

GAS PURIFYING MATERIALS

NATRONA RED ORE
To Be Mixed With Fluffing Material

MINERAL SPONGE
The Best Fluffing Material

MINERAL SPONGE OXIDE
Prepared For Use

PENNSYLVANIA SALT MFG. CO.

WIDENER BUILDING

PHILADELPHIA - - - - - - - PENNA.

Coal Shipment Relieves New Haven Company

Twelve hundred tons of bituminous coal which arrived at the New Haven Gas Light Company's dock a few days ago relieved a troublesome situation that was worrying the gas company officials. The company has had considerable difficulty in obtaining coal shipments, and as a result the huge coal supply that was stored up last summer has gradually been eaten away.

J. Arnold Norcross, of the gas company, said that the trouble lay in the fact that the coal was being used faster than they were receiving it. About 6,000 tons a month are needed to keep up the normal operation of the plant.

"We have enough for immediate need," said Mr. Norcross, "and there is no danger of our going out of gas. As is the case in winter, we are making more water gas than coal gas. Water gas is richer, anyway, than coal gas. We can use coke to make our water gas, but we can't make coke unless we have our gas coal, and we're short on that.

"We are so fixed, however, that there will be no chance of the coal shortage holding up the gas supply. If we have to stop coal gas we'll use oil gas and we'll get along some way. We have ready various kinds of apparatus for just such an emergency as this, and there need be no alarm over the effect the coal famine may have on us."

Rate Increase Asked by Appleton, Wis., Company

Authority to increase its gas rates approximately 50 per cent is asked by the Wisconsin Traction, Light, Heat & Power Company, Appleton, Wis., in an application filed Dec. 18 with the Wisconsin Railroad Commission, according to information received recently. The hearing was to be held on Tuesday, Jan. 8, in the State capitol at Madison.

The traction company in applying for permission to increase its gas rates sets forth that the price of gas coal has increased from $3.95 a ton in 1911, when the present rate was established, to $7.22 this year. The price of gas oil has increased in the same period from $0.0275 per gallon to $0.072 per gallon. It is also stated that the pay for stokers and other classes of labor has increased at least 50 per cent; the cost of cast-iron and other pipes used for distributing the gas has increased threefold, and that the cost of materials and supplies generally have increased at least 300 per cent from 1911 to 1917.

It is also pointed out in the application that the freight rate for coal delivered to the Appleton gas plant is 72 cents higher than the rate for Sheboygan, Green Bay and other lake cities. It is suggested in the application that the company be granted permission to immediately increase the gas rate 50 per cent.

Wants Rate Increased at Walla Walla, Wash.

Word received recently from Olympia was that the Pacific Power & Light Company, of Walla Walla, Wash., has filed a proposed new gas tariff for Walla Walla increasing the rate for a thousand cubic feet 10 cents, making it $1.95. The minimum charge, it is proposed, will be raised from 50 cents to $1.

Omaha Company to Increase Rates

The Omaha Gas Company of Nebraska announces that beginning Feb. 1, 1918, they will advance the rate from $1 to $1.15 per 1,000 cu. ft. of gas, on account of the advanced prices of materials used in its manufacture.

This company during 1917 laid 3 miles of new mains. It connected up with 670 new houses and put in 1,454 meters, giving it a total of 34,974 meters in use. It has 326 miles of main. Gas made during the year was 1,115,000,000 cu. ft. Improvements in the year were $85,000.

Increased Rates Asked for Carlinville, Ill.

Figures offered to the State Utilities Commission recently show that the Madison County Light & Power Company proposed to increase its gas rates almost 50 per cent at Carlinville, Ill. The company presented its case before C. M. Tinney, and on motion of attorneys for the objecting residents of Carlinville, the case was continued for Jan. 17.

The company declares that the advance in costs of fuel and equipment makes the increase of rates necessary. A large number of residents of Carlinville are protesting against the proposed increase. After the company's figures were offered, a continuance was granted on motion of Attorney Bell.

Commission Issues Warnings

The Massachusetts Gas & Electric Light Commissioners have issued the following suggestion to users of gas for lighting, heating and cooking, this action being prompted by the greatly increased consumption of gas due to the coal shortage in New England:

"If gas goes out for any reason shut all cocks and immediately notify the company supplying you.

"Be sure that all burners not in use are shut off.

"Do not go to sleep with gas burning in the room.

"Shut off the cock at home piping to which flexible tubing is connected, when portable stoves or appliances are not in use.

"Be sure no cocks are open before you deposit a coin in a prepayment meter when gas already paid for is exhausted.

"Be sure to shut the cock before leaving it if the gas will not light.

"If you smell gas, shut off all cocks, air the room thoroughly and notify the company. Do not under any circumstances search for leaks with a candle or match.

"Do not waste gas. Every foot used unnecessarily tends to make the coal situation more acute."

Coal Association Admits Wastefulness of Open Coal Grates

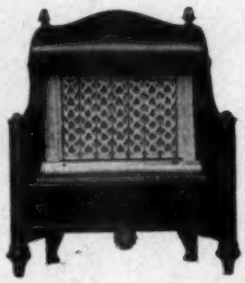
Gas men have known and maintained for a long time that the use of open-coal grates for heating purposes is wasteful to say the least, but it is doubtful if the most optimistic gas man ever expected to hear a coal man make such a declaration. This and even more could have been heard at the annual convention of the National Retail Coal Merchants' Association held at Chicago last week.

"The use of coal grates for heating purposes at this time is sinful," declared William Bartrim, of Kansas City. "When you burn coal in a grate the real caloric value goes up the chimney in smoke. The reason for this is that no proper draft can be secured in a grate, and to burn properly each pound of carbon should have 12 pounds of air around it."

The association adopted resolutions pledging its support in any attempt by the Government to regulate the distribution of coal.

Get This Thought Down in Your Mind!

The Radiantfire brings permanent business—it is not a seasonable load. It is not a novelty that will be soon laid aside. The Radiantfire becomes a permanent feature, an essential comfort in every home it enters. It keeps on burning gas from early fall till summer comes again.



And all the gas it burns is sold at full price and full profit—with no maintenance cost—almost no installation cost. Sell the ***Radiantfire.*** Now is the time.

General Gas Light Co.

New York Kalamazoo San Francisco

Humphrey Radiantfires are covered by the following U. S. Patents—Pat. No. 895,736, Aug. 11, 1908; Pat. No. 48,063, Nov. 2, 1915; Pat. No. 48,898, April 18, 1916; Pat. No. 48,935, April 25, 1916; Pat. No. 1,245,346, Nov. 6, 1917; Pat. No. 1,245,347, Nov. 6, 1917.

A Busy World Is Short of Labor

Storekeepers, manufacturers, business men everywhere are up against a shortage of labor. Grasping every idea for better, faster work, they are not overlooking LIGHT—the Dad of all efficiency—eye-resting gas light.

Safety with speed requires an even spread of illumination everywhere, and gas with the

"Reflex-20"

makes this possible because of the low cost of installing, the low cost of maintenance and gas, and the high power of the unit. Hence the Harvest for the Gas Company with the "Reflex-20." Materials enough on hand to make up some more lamps, but to be sure of present prices you should get your orders in today.

WELSBACH COMPANY

Factories: Gloucester **NEW JERSEY**

The "C-C" Lighter—"the pilot that won't blow out"—is making a hit on "Reflex-20" installations

Welsbach Company Brings Infringement Suit Against Maker of "Usalyte" Light

Suit for infringement of United States Letters Patent No. 872,070, dated Nov. 26, 1907; No. 1,202,080, dated Oct. 24, 1916; re-issue patent No. 14,241, dated Jan. 2, 1917; re-issue patent No. 12,242, dated Jan. 2, 1917, was entered on Dec. 20, 1917, in the United States Circuit Court for the Southern District of New York against J. I. Robin for an injunction and accounting in the manufacture and sale of a small cluster burner with soft mantles, which the Welsbach Company claim infringe the above patent rights covering their C. E-Z lamp.

Fall River Gas Increase Effective on Feb. 1 Bills

The Fall River Gas Works Company has notified the city government of an increase in gas rates which went into effect Jan. 1, 1918. Increase in costs of materials and increase in wages are assigned as the reasons for the action of the company. It has been decided to increase the rate for all gas sold 15 cents per thousand cubic feet, making the new maximum rate of $1 gross or 95 cents net per thousand. This change will affect bills to be rendered after Feb. 1.

Increase in Costs

The following schedule shows the marked increases which have occurred in the costs to this company of the principal materials which it uses in the manufacture of gas:

Gas Coal

Average price, 1916	$3.63 gross ton
Average price, 1917	$4.46 gross ton
Probable average price in 1918	$6.94 gross ton

An increase of nearly 100 per cent in two years.

Gas Oil

Average price, 1916	3.51c. per gal.
Average price, 1917	3.76c. per gal.
Average price, 1918	7.75c. per gal.

An increase of more than 100 per cent in two years.

Due to these advances in prices the following increases will occur in the cost of coal and oil:

Gas Coal

Cost (estimated) in 1918 of total coal required	$231,918
Cost (estimated) in 1918 of total coal required, if purchased at 1916 prices	120,835
	$110,183

Gas Oil

Cost in 1918 of total oil required	$88,350
Cost in 1918 of total oil required, if purchased at 1916 prices	40,140
	$48,210

Total increase in cost due to advance in prices	$158,393

Advances in Wages, Too

In addition, there have been marked increases in wages and other materials of all kinds.

While these increases will be offset to a very small degree by the expected increase in business, if no increases were made in rates the net earnings for 1918 would be at least $150,000 less than those in 1917.

This company does not intend to raise the prices to a point which would completely offset the expected reduction in net earnings, but it is necessary to make such an increase that a substantial part of the loss of revenue will be provided for.

First Hearing on Pacific Coast Cities Increase

Contending that the advanced price of oil and raw materials justified the increase, the Pacific Gas & Electric Company presented before the railroad commission testimony in support of its application for an increase of 10 per cent in the price of gas in all the cities and towns it serves except San Francisco. Residents of Sacramento, San Rafael, San Jose, Berkeley, Vallejo, Fresno, Grass Valley, Nevada City, Los Gatos, Sebastopol, Daly City, Woodland, San Leandro, Santa Rosa, Napa, Colusa, Marysville, Alameda, Albany, Oroville, South San Francisco, San Bruno and San Mateo were represented by Attorney B. D. M. Green. Mr. Green stated that he had not received any authority as yet to represent Chico, Yuba and some of the Peninsula towns, and John F. Davis appeared individually for Burlingame.

The company asks to add $500,000 a year to its revenue. It has asked the railroad commission for permission to raise its rates from a graduated scale of $1.50, $1 and 80 cents to a scale of $1.65, $1.10 and 90 cents.

New Conservation Department formed in Illinois

A department of fuel conservation has been created by John E. Williams, Illinois State Fuel Administrator. While the department will concern itself principally with the conservation of coal, it will also interest itself in gas and oil as fuels.

Prof. H. H. Stoek, of the engineering department of the University of Illinois, has been appointed chairman of the new department. Fuel conservators will be appointed in every county in the State, and the first work of the department will be an educational campaign to promote the intelligent use and conservation of fuels of all sorts.

Surcharge of 10 Cents Added by Chester, Pa., Company

The Chester County Gas Company is making a formal announcement to its consumers in West Chester and Downingtown that they will be forced to add 10 cents to each 1,000 cu. ft. of gas used on all bills after Feb. 1, and in view of the conditions generally this is being accepted as most fair, in view of the added business which has come to the company by reason of the scarcity of coal and the bitter weather.

This surcharge is to remain in effect only until such time as the prices of materials entering into the manufacture of gas becomes normal.

Adams, Mass., Company Wants Permission to Increase Capital

A hearing on the petition of the Adams (Mass.) Gas Light Company to increase its capital stock to $61,500, to take care of extensions and improvements, will be held in Boston on Jan. 21, in the forenoon, before the public service commission, and undoubtedly the town will be represented by some of its officials.